

AGENDA
CALIFORNIA TRAFFIC CONTROL DEVICES COMMITTEE (CTCDC)
October 26, 2006 Meeting
4050 Taylor Street, San Diego, CA 92110
TIME 9:00 AM

Organization Items

- 1. Introduction**
- 2. Approval of Minutes (June 14, 2006 Meeting)**
- 3. Public Comments**

At this time, members of the public may comment on any item not appearing on the agenda. Matters presented under this item cannot be discussed or acted upon by the Committee at this time. For items appearing on the agenda, the public is invited to make comments at the time the item is considered by the Committee. Any person addressing the Committee will be limited to a maximum of five (5) minutes so that all interested parties have an opportunity to speak. When addressing Committee, please state your name, address, and business or organization you are representing for the record.

Agenda Items

4. Public Hearing

Prior to adopting rules and regulations prescribing uniform standards and specifications for all official traffic control devices placed pursuant to Section 21400 of the California Vehicle Code (CVC), the Department of Transportation is required to consult with local agencies and hold public hearings.

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|------|--|-----------------------------|
| 06-7 | MUTCD 2003 Revision No. 1 (Pharmacy Signing) | (Continued)
(Meis) |
| 06-8 | FHWA's Interim Approvals for Optional Use of Traffic Control Devices | (Continued)
(Mansourian) |
| 06-9 | Proposed to Adopt G12-1 (CA), G12-2 (CA), R75-1 (CA), S22-1 (CA) and C43 (CA) signs
(Requested by Caltrans) | (Introduction)
(Meis) |

5. Request for Experimentation

- | | | |
|-------|---|--------------------------|
| 03-6 | Radar Speed (Speed Feedback) Display Sign
(Final Report by the City of San Jose) | (Continued)
(Borstel) |
| 03-15 | Radar Speed Sign
(Final Report by the City of Freemont) | (Continued)
(Borstel) |
| 99-13 | Illuminated Pavement Markers on Median Barriers
(Report by Caltrans D7) | (Continued)
(Meis) |
| 02-15 | Radar Guided Dynamic Curve Warning System
(Status Report by Caltrans D5) | (Continued)
(Meis) |

6. Discussion Items

- | | | |
|-------|--|--------------------------------|
| 06-10 | Expedited process to adopt Word Message Signs | (Introduction)
(Meis) |
| 06-11 | Alternative to the Approved Bicycle Pavement Marking
(Marin County) | (Introduction)
(Mansourian) |
| 06-12 | No Parking Signs
(City of San Francisco) | (Introduction)
(Meis) |
| 06-13 | Proposal to Amend Section 7B.08 and 7B.12
(Proposed by the City of Santa Ana) | (Introduction)
(Fisher) |

7. Information Items

- | | | |
|-------|--|-------------------------|
| 03-14 | Numbering of Signalized Intersections
(Experiment Request by the CVAG) | (Continued)
(Babico) |
| 06-A | Section 1978 of Streets and Highways Code (AB2002) | (Meis) |
| 04-E | California MUTCD Adoption (FHWA's MUTCD 2003 Revision 1,
as amended by for use in CA) | (Meis) |

8. Tabled Item

- | | |
|------|--|
| 06-5 | Clear The Way Signage (Drive Damaged Vehicle to Shoulder)
(Experiment Request by CHP) |
| 06-6 | Wildlife Corridor Signs |

9. Next Meeting**10. Adjourn**

ITEM UNDER EXPERIMENTATION

- | | | |
|-------|--|------------|
| 99-12 | Speed Striping For Smart Crosswalks
(Experiment Agency-Caltrans D7)
Status: Caltrans D7 will submit a report on the experiment | (Meis) |
| 01-4 | Tactile Pedestrian Indicator With Audible Information
(Experiment request by the City of Santa Cruz) | (Tanda) |
| 01-9 | IN-ROADWAY WARNING LIGHTS AT R/R CROSSINGS
(Experiment requests by CPUC in cooperation Kern Co. & City of Fresno) | (Meis) |
| 03-1 | Speed Feedback (Radar Speed) Sign
(Experimentation Agency – City of Whittier) | (Fisher) |
| 03-4 | Radar Speed Sign
(Experiment Agency – City of Vacaville) | (Borstel) |
| 03-5 | Radar Speed Sign
(Experiment Agency – City of San Mateo) | (Borstel) |
| 04-9 | Request to Experiment with “Watch The Road” Sign
(Experiment Agency – Los Angeles DOT) | (Bahadori) |
| 04-10 | Slow for the Cone Zone Sign
(Experiment Agency – Caltrans) | (Meis) |
| 04-12 | Requests for experimentation with “Flashing Yellow Arrows”
(Experiment Agency – City of Fullerton and Pasadena) | (Bahadori) |
| 05-10 | Proposal for the Watershed Boundary Signs
(City of San Diego) | (Meis) |

STATUS OF CALTRANS ACTION ON PAST ITEMS

- Item 01-1 U-TURN SIGNAL HEADS INDICATOR
Caltrans will develop appropriate standards to ensure visibility and make the U-turn signal head indicator an official traffic control device by inclusion in the Caltrans Supplement.
- Item 00-4 USE OF RAISED PAVEMENT MARKERS IN TRANSVERSE PATTERN
Caltrans will take appropriate action on the recommendation made by the Committee.
- Item 02-3 RIGHT EDGELINE
Caltrans will take appropriate action on the recommendation made by the Committee.

Public Hearing:**06-7 MUTCD 2003 Revision No. 1 (Pharmacy Signing)****The Pharmacy signing was discussed during the June 2006 meeting and the following is the summary of the discussion:**

Gerry stated that two years ago, the Committee decided not to adopt the pharmacy signing in California that was adopted by FHWA through revision 1 of the MUTCD 2003. Gerry informed the Committee that a Walgreen's representative approached him and requested to reopen this item. He asked to place the item under discussion items, and if the Committee agreed, the item could be placed under action items for the next meeting. Gerry asked the representative of Walgreen's to address this item.

Eric Douglas, Public Affairs Department, Walgreen's, informed the Committee that a number of other states has adopted the pharmacy signing. The pharmacies that are opened 24-hours, seven days a week, with the presence of a licensed pharmacist are eligible for the signage. He stated that it is good for the consumer, because if a traveling motorist needs medical help he could get help from a licensed pharmacist. He gave examples, such as if a motorist is diabetic and he needs a syringe for insulation, he will get one. If a child gets sick all of sudden while traveling and you do not know what is wrong, the medical help can be received from a pharmacist. He stated that states such as Florida, Idaho, Indiana, Missouri, New Mexico, North Dakota, Utah, Washington, and Wyoming have adopted pharmacy signs. He requested the Committee to place the pharmacy signing item on the agenda as an action item.

Chairman Mansourian asked for comments from the Committee members.

Hamid Bahadori asked whether the licensed pharmacist would be present 24-hours, seven days a week.

Eric Douglas responded yes, and that this is one of the main requirements.

John Fisher asked what would be the administrative methods to notify the State that a particular pharmacy meets the requirements for signing? He further asked who would take the lead, the highway agency or the pharmacy?

Eric Douglas responded that every state has a different process. If a pharmacy falls within the criteria (3-miles from the highway), then the pharmacy can request the State to install signs, however the cost will be covered by the pharmacy. He did not know who takes the lead.

Hamid Bahadori stated that a sign illustration distributed by Eric shows the Walgreens logo on the bottom of the sign, and questioned if it is acceptable.

Gerry Meis stated that there is a logo program in rural areas, however the urbanized areas do not have a logo program.

Hamid Bahadori stated that hospital signs have trail blazer signs, and wondered if the pharmacy signing could have a similar program. Secondly, three miles is a long stretch, and there will be a number of signs required to direct motorists.

Gerry Meis stated that the State would not install signs on the highway unless the trail blazer signs are up.

John Fisher stated that there would be number of signs in the 3-mile stretch.

Gerry Meis stated that this is a discussion item and Walgreens is requesting to place it on the agenda under the action items.

Jacob Babico stated that the Fire Department sign program was created by legislation. Is there a need for legislation for pharmacy signing?

Gerry responded no.

Matt Schmitz, FHWA, stated that normally the Pharmacy Symbol (D9-20) sign with “24 HR” (D9-20a) plaque sign would be appropriate. However, in rural areas, a logo program may be used.

George Allen, City of Garden Grove, stated that if there are four pharmacies within a few blocks, how would those pharmacies be signed? He suggested to the Committee, before taking action on this item, review all the potential problems. He stated that there will be confusion and a lot of cost would be involved.

Hamid Bahadori stated that he recommends to place the pharmacy signing request on the next CTCDC agenda under the action items, however, he is not sure how to address all the concerns.

John Fisher asked Eric Douglas to come up with a draft proposed policy which would address all the concerns raised by individuals.

The Committee suggested placing this item on the agenda under the action items.

The following red text and signs were included in the MUTCD 2003 in regards to Pharmacy signing:

Page 2D-23, Figure 2D-11 was revised to include Pharmacy Symbol Sign:



Section 2D-45

Standard:

Symbols and word message General Service legends shall not be intermixed on the same sign. The Pharmacy (D9-20) sign shall only be used to indicate the availability of a pharmacy that is open, with a State-licensed pharmacist present and on duty, 24 hours per day, 7 days per week, and that is located within 4.8 km (3 mi) of an interchange on the Federal-aid system. The D9-20 sign shall have a 24 HR (D9-20a) plaque mounted below it.

Section 2E-51 (Page 2E-56)

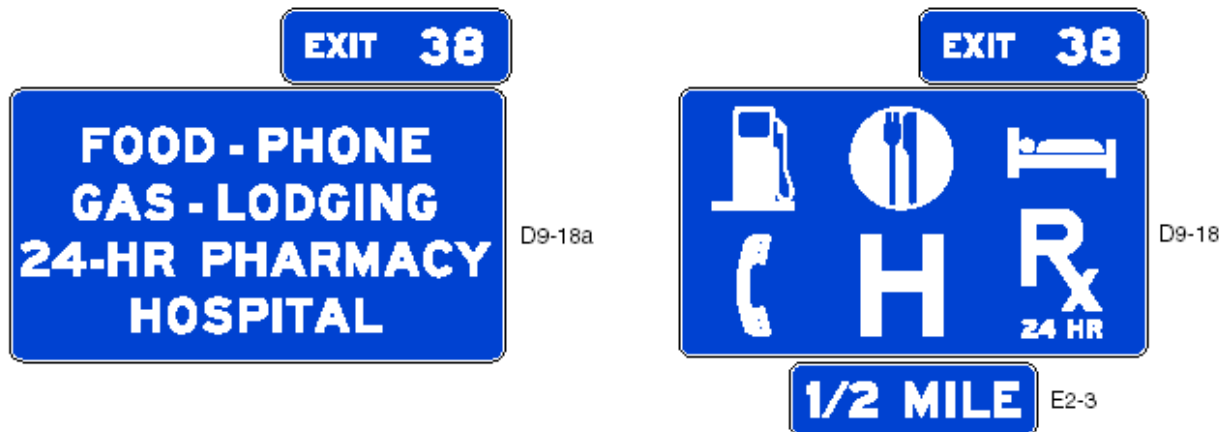
Guidance:

F. 24-Hour Pharmacy if a pharmacy is open, with a State-licensed pharmacist present and on duty, 24 hours per day, 7 days per week and is located within 4.8 km (3 mi) of an interchange on the Federal-aid system.

Standard:

Signs for services shall conform to the format for General Service signs (see Section 2D.45) and as specified herein. Letter and numeral sizes shall be as shown in Tables 2E-1 through 2E-4. No more than six general road user services shall be displayed on one sign, which includes any appended sign panels. General Service signs shall carry the legends for one or more of the following services: Food, Gas, Lodging, Camping, Phone, Hospital, **24-Hour Pharmacy**, or Tourist Information.

(Page 2E-57)



(Page 2E-58)

Option:

Substitutions of other services for any of the services shown above may be made by placing the substitution in the lower right (four or **six** services) or extreme right (three services) portion of the sign panel. An action message or an interchange number may be used for symbol signs in the same manner as they are used for word message signs. The Diesel Fuel (D9-11) symbol or the LP-Gas (D9-15) symbol may be substituted for the symbol representing fuel or appended to such assemblies. The Tourist Information (D9-10) symbol or **the 24-Hour Pharmacy (D9-20 and D9-20a)** symbol may be substituted on any of the above configurations.

Section 2F.01**Standard:**

Eligible service facilities shall comply with laws concerning the provisions of public accommodations without regard to race, religion, color, age, sex, or national origin, and laws concerning the licensing and approval of service facilities.

The attraction services shall include only facilities which have the primary purpose of providing amusement, historical, cultural, or leisure activities to the public.

Distances to eligible 24-hour pharmacies shall not exceed 4.8 km (3 mi) in any direction of an interchange on the Federal-aid system.

Guidance:

Except as noted in the Option below, distances to eligible services **other than pharmacies** should not exceed 4.8 km (3 mi) in any direction.

Option:

If, within the 4.8 km (3 mi) limit, facilities for the services being considered **other than pharmacies** are not available or choose not to participate in the program, the limit of eligibility may be extended in 4.8 km (3 mi) increments until one or more facilities for the services being considered chooses to participate, or until 25 km (15 mi) is reached, whichever comes first.

Standard:

If State or local agencies elect to provide Specific Service signing for pharmacies, both of the following criteria shall be met for a pharmacy to qualify for signing:

A. The pharmacy shall be continuously operated 24 hours per day, 7 days per week, and shall have a State-licensed pharmacist present and on duty at all times; and

B. The pharmacy shall be located within 4.8 km (3 mi) of an interchange on the Federal-aid system.

Section 2F.02 Application**Standard:**

The number of Specific Service signs along an approach to an interchange or intersection, regardless of the number of service types displayed, shall be limited to a maximum of four. In the direction of traffic, successive Specific Service signs shall be **for 24-hour pharmacy**, attraction, camping, lodging, food, and gas services, in that order.

A Specific Service sign shall display the word message GAS, FOOD, LODGING, CAMPING, ATTRACTION, **or 24-HOUR PHARMACY**, an appropriate directional legend such as the word message EXIT XX, NEXT RIGHT, SECOND RIGHT, or directional arrows, and the related logo sign panels. No more than three types of services shall be represented on any sign or sign assembly. If three types of services are shown on one sign, then the logo panels shall be limited to two for each service (for a total of six logo panels). The legend and logo panels applicable to a service type shall be displayed such that the road user will not associate them with another service type on the same sign. No service type shall appear on more than one sign. The signs shall have a blue background, a white border, and white legends of upper-case letters, numbers, and arrows.

Section 2H.08, Figure 2H-5 revised to add Pharmacy (RM-230) Symbol.



RM-230
24-Hour Pharmacy

06-8 FHWA's Interim Approvals for Optional Use of Traffic Control Devices

During the June 14, 2006 CTCDC meeting, Chairman Mansourian requested to place this item on the agenda under action items. There are five interim approvals issued by FHWA. He suggested California might consider blanket approval for all the agencies. He asked Johnny Bhullar whether he would like to provide his thoughts on this item.

Johnny Bhullar stated that the MUTCD is a dynamic document and FHWA does incorporate changes every three to five years. The California MUTCD will follow the same process for updates. FHWA has created an interim approval category, which is posted on the MUTCD website and eventually these interim approvals will be included in the future MUTCDs. These approvals are not official yet, however agencies could use the devices by simply writing to the FHWA. FHWA advises that the requesting agency must inform their State DOT. He stated that some of these devices might not be adopted in California, and he would like to ask Committee how they would like to communicate with local agencies about that. The Committee may want to review the interim approvals and see which ones they will be adopting in California and then might ask for statewide interim approval.

Chairman Mansourian stated that there are a number of cities inquiring for the use of these devices. He suggested placing this item on the agenda under the action items, and the Committee might consider requesting Caltrans to apply for a blanket approval statewide.

Gerry Meis stated that after receiving recommendation from the Committee, Caltrans could apply for the approval from FHWA for all the devices or on a case by case basis.

Hamid Bahadori asked whether it is possible for Caltrans to ask FHWA to not approve the request for California until this Committee agrees with the device? Because, if a device is used by local agencies based on interim approval and later on this Committee does not recommend for use in California, then the device would be illegal according to the California Vehicle Code.

John Fisher stated that the Committee may consider administrative approval such as countdown signal heads and speed feedback signs.

Hamid Bahadori recommended placing the item under the action items for the next meeting.

Johnny Bhullar requested to place another item on the agenda under discussion items about "how to deal with interim approvals in California".

Chairman Mansourian agreed with Johnny's suggestion.

The following are the five Interim Approvals issued by the FHWA:

Item 1

Interim Approval for Optional Use of Flashing Yellow Arrow for Permissive Left Turns (IA-10)

Memorandum

U.S. Department of Transportation **Federal Highway Administration**

Subject: **INFORMATION: MUTCD – Interim Approval for** Date: March 20, 2006
Optional Use of Flashing Yellow Arrow for Permissive Left Turns (IA-10)

From: Original signed by:
Jeffrey F. Paniati, Associated Administrator for Operations

To: Division Administrators
Resource Center Director and Operations Managers
Federal Lands Highway Division Engineers

Purpose: The purpose of this memorandum is to issue an Interim Approval for the optional use of a flashing yellow arrow (FYA) signal indication as the signal display for left-turn movements during permissive turn intervals at signalized locations. Interim Approval allows interim use, pending official rulemaking, of a new traffic control device, a revision to the application or manner of use of an existing traffic control device, or a provision not specifically described in the MUTCD.

Background: For many years, some engineers have had concerns that drivers turning left on a permissive circular green signal indication might inadvertently mistake that indication as implying the left turn has the right of way over opposing traffic, especially under some geometric conditions. A variety of different indications and signal face arrangements for permissive left turns have been tried over the years by road authorities, but no comprehensive research had been conducted to evaluate all the potential displays.

Research on the Flashing Yellow Arrow: National Cooperative Highway Research Program (NCHRP) Project 3-54, Evaluation of Traffic Signal Displays for Protected/Permissive Left-Turn Control, was initiated in the mid-1990s for the purpose of conducting the necessary definitive research to evaluate the wide variety of potential displays for permissive left-turn movements. Over a 7-year period, a very comprehensive research process was conducted, including engineering analyses, static and video-based driver comprehension studies, field implementation, video conflict studies, and crash analyses. In 2003, the completed research was published as NCHRP Report 493. The full report may be accessed via the Interim Approvals page of the MUTCD website at <http://mutcd.fhwa.dot.gov>. Key findings of the research include:

- The FYA was found to be the best overall alternative to the circular green as the permissive signal display for a left-turn movement.
- FYA was found to have a high level of understanding and correct response by left-turn drivers, and a lower fail-critical rate than the circular green.
- The FYA display in a separate signal face for the left-turn movement offers more versatility in field application. It is capable of being operated in any of the various modes of left-turn operation by time of day, and is easily programmed to avoid the "yellow trap" associated with some permissive turns at the end of the circular green display.

The NCHRP Report 493 recommends that the FYA be allowed as an alternative to the circular green for permissive left-turn intervals. It also recommends certain specific signal face arrangements and locations, based on driver understanding and performance.

Subsequent to the publication of the NCHRP research, FHWA has approved additional experimentation with the FYA by numerous jurisdictions. Although these experimentations are still in progress, initial results have been positive and supportive of the NCHRP research findings.

FHWA Evaluation of Results: The Office of Transportation Operations has reviewed the research and subsequent additional experimentation and considers the FYA to be successful. Motorists responded strongly and favorably to the concept with little or no public information; these highway users intuitively knew what the flashing yellow arrow meant. The FHWA believes that the FYA has a low risk of safety or operational concerns. Further, the optional use of the FYA provides safety and operational benefits that merit earlier implementation by agencies that wish to use it, pending official MUTCD rulemaking. FYA provides the ability to easily implement lead-lag left-turn phasing and/or variable phasing by time of day, without revising signal hardware and without creating the "left-turn yellow trap" that can occur with the traditional circular green display. Discussions at recent meetings of the National Committee on Uniform Traffic Control Devices (NCUTCD) indicate a consensus in the practitioner community in support of optional use of the FYA. There is a low risk of negative reactions by industry or specific manufacturers or suppliers, and FHWA does not perceive any adverse financial impacts. All existing signal manufacturers make standard signal faces capable of displaying the FYA for left-turn sequences. This Interim Approval does not create a new mandate compelling installation of the FYA for left turns, but for those agencies that do wish to use FYA, it is a low-cost measure to implement.

Conditions of Interim Approval: Interim Approval for the optional use of the FYA for a permissive left-turn indication will be granted to any jurisdiction that submits a written request to the Office of Transportation Operations. A State may request Interim Approval for all jurisdictions in that State. Jurisdictions using FYA under this Interim Approval must agree to maintain an inventory list of all locations where the devices are placed and to comply with Item F at the bottom of Page 1A-6 of the 2003 MUTCD, Section 1A.10 which requires: "An agreement to restore the site(s) of the Interim Approval to a condition that complies with the provisions in this Manual within 3 months following the issuance of a Final Rule on this traffic control device. This agreement must also provide that the agency sponsoring the Interim Approval will terminate use of the device or application installed under the Interim Approval at any time that it determines significant safety concerns are directly or indirectly attributable to the device or application. The FHWA's Office of Transportation Operations has the right to terminate the interim approval at any time if there is an indication of safety concerns."

If an agency opts to use FYA under this Interim Approval, the following design and operational requirements shall apply, and shall take precedence over any conflicting provisions of existing Section 4D.06 of the 2003 MUTCD for the approach on which FYA is displayed:

1. **Mode(s) of Left-Turn Operation:**
 - a. The flashing YELLOW ARROW signal indication may be displayed to indicate a permissive left-turn movement in either a protected/permissive mode or a permissive only mode of operation.
 - b. It is not necessary that the left-turn mode for an approach always be the same throughout the day. Varying the left-turn mode on an approach among the permissive only and/or the protected/permissive and/or the protected only left-turn modes during different periods of the day is acceptable.
2. **Signal Face Arrangement:**
 - a. At least one separate four-section signal face, in addition to the minimum of two signal faces for other traffic on the approach, shall be provided for the left-turn movement. The separate left-turn signal face shall be capable of displaying, from top to bottom (or left to right in a horizontally-aligned face), the following set of signal indications: Steady left-turn RED ARROW, steady left-turn YELLOW ARROW, flashing left-turn YELLOW

- ARROW, and steady left-turn GREEN ARROW. If the left-turn movement is always operated in the permissive only mode, a separate three-section face shall be used instead, with the GREEN ARROW signal section omitted.
- b. A CIRCULAR RED may be substituted for the RED ARROW in States where RED ARROWS are not in current use. If CIRCULAR RED is used instead of RED ARROW in the left-turn signal face, and the left-turn signal face sometimes displays a steady CIRCULAR RED signal indication at a time when the signal faces for the adjacent through movement are not displaying steady CIRCULAR RED signal indications, the CIRCULAR RED signal indication in the left-turn signal face shall be shielded, hooded, louvered, positioned, or designed such that it is not readily visible to drivers in the through lane(s) or a LEFT TURN SIGNAL sign (R10-10) shall be installed adjacent to the left-turn signal face.
 - c. A dual-arrow signal section (capable of alternating between the display of a steady GREEN ARROW and a flashing YELLOW ARROW signal indication during steady mode operation) may be used to reduce the total number of signal sections to three if physical conditions make it impractical to use a four-section signal face.
3. Signal Face Location: If an exclusive left-turn lane is present on the approach and if a left-turn signal face is mounted over the roadway, that left-turn signal face should be centered over the left-turn lane or the extension thereof. If centering of the overhead left-turn signal face is not practical, it shall not be positioned any further to the right than the lane line (or the extension of the lane line) between the left-turn lane and the adjacent through lane, nor shall it be positioned any further to the left than the left edge of the left-turn lane (or extension thereof).
4. Signal Displays:
- a. During a protected left-turn movement, the left-turn signal face shall display only a steady left-turn GREEN ARROW signal indication.
 - b. During a permissive left-turn movement, the left-turn signal face shall display only a flashing left-turn YELLOW ARROW signal indication.
 - c. During a prohibited left-turn movement, the left-turn signal face shall display only a steady left-turn RED ARROW or a steady CIRCULAR RED.
 - d. A steady left-turn YELLOW ARROW signal indication shall be displayed following every steady left-turn GREEN ARROW signal indication.
 - e. A steady left-turn YELLOW ARROW signal indication shall be displayed following the flashing left-turn YELLOW ARROW signal indication if the permissive left-turn movement is being terminated and the left-turn signal face will subsequently display a steady red signal indication. The signal section that displays the steady left-turn YELLOW ARROW signal indication during change intervals shall not be used to display the flashing left-turn YELLOW ARROW signal indication for permissive left turns.
 - f. When a permissive left-turn movement is changing to a protected left-turn movement, a steady left-turn GREEN ARROW signal indication shall be displayed immediately upon termination of the flashing left-turn YELLOW ARROW signal indication. A steady left-turn YELLOW ARROW signal indication shall not be displayed between the display of the flashing left-turn YELLOW ARROW signal indication and the display of the steady left-turn GREEN ARROW signal indication.
 - g. During flashing mode operation (see Section 4D.12), the display of a flashing left-turn YELLOW ARROW signal indication shall be only from the signal section that displays a steady left-turn YELLOW ARROW signal indication during steady mode (stop-and-go) operation.

Any questions concerning this Interim Approval should be directed to Mr. Scott Wainwright at scott.wainwright@fhwa.dot.gov or by telephone at 202-366-0857.

Item 2

FHWA Policy Memorandums - Manual on Uniform Traffic Control Devices**Memorandum**

U.S. Department of Transportation
Federal Highway Administration

Subject: **INFORMATION: MUTCD – Interim Approval for Addition of RV Friendly Symbol to Specific Service Signs (IA-8)** **Date:** September 6, 2005

From: Jeffrey F. Paniati /s/ Jeffrey F. Paniati, Associate Administrator
for Operations

Reply
to HOTO-1
Attn.
of:

Division Administrators
Resource Center Managers
To: Federal Lands Highway Division Engineers

Purpose: The purpose of this memorandum is to issue an Interim Approval for the optional use of a symbol on specific service signs to indicate that a business has facilities that are "RV-friendly;" i.e., designed with facilities to accommodate the on-site movement and parking of recreational vehicles (RVs). The RV Friendly symbol is not currently specifically described in the Manual on Uniform Traffic Control Devices (MUTCD). Interim Approval allows interim use, pending official rulemaking, of a new traffic control device, a revision to the application or manner of use of an existing traffic control device, or a provision not specifically described in the MUTCD.

Background: Motorists driving RVs, motor homes, and/or towing trailers may experience difficulty in identifying and locating service facilities that have large parking spaces and other amenities that over-sized vehicles need. A study in Oregon has found that a simple RV Friendly symbol provides easy recognition and advance notice to motorists and informs them that maneuvering their vehicle at specific facilities is not a problem. The RV Friendly symbol alerts RV motorists to those roadside specific services that cater to the special needs of motor homes and RV trailer combinations.

Research on the RV Friendly Symbol: In April 2003, the FHWA approved a request from the Oregon Department of Transportation to experiment with the RV Friendly program developed by the Oregon Travel Information Council (OTIC) and the Family Motor Coach Association. The experiment was conducted from June through August 2003 on Interstate 5 between exit 233 and exit 278. Existing businesses on specific service signs along Interstate 5 were screened by the OTIC to see if they met the criteria they determined necessary for participation in the RV friendly program. The OTIC installed the RV Friendly symbol on the business logo panels and delivered to each business a set of follow-up symbols to guide RV motorists onto the site location of their services. Public awareness and media education was conducted. Based upon a successful experimentation for a limited number of locations, approval to expand the experimentation was granted on May 17, 2004.

Evaluation included design studies to determine visibility of the symbol, customer questionnaire surveys, and business interviews. The complete evaluation plan and report findings are posted on the Interim Approval page of the MUTCD website at <http://mutcd.fhwa.dot.gov>.

FHWA Evaluation of Results: The Office of Transportation Operations has reviewed the Oregon experimentation and considers it to be successful. Motorists traveling in RVs and pulling

trailers responded strongly and favorably to the concept with only modest public information; these highway users intuitively knew what the symbol meant. We believe that this new symbol sign has a low risk of safety or operational concerns. Further, the optional use of the RV Friendly symbol on specific service signs provides operational benefits to certain road users that merit earlier implementation by agencies that wish to use it, pending official MUTCD rulemaking. The optional use of the RV Friendly symbol on specific service signs is a low cost measure, as this addition does not require the replacement of specific service signs themselves. Discussions at a recent meeting of the National Committee on Uniform Traffic Control Devices (NCUTCD) indicate a consensus in the practitioner community in support of optional use of the RV Friendly symbol under an Interim Approval. The RV Friendly Program is popular among all aspects of the industry. This Interim Approval does not create a new mandate compelling installation of the RV Friendly symbol signs.

Conditions of Interim Approval: Interim Approval for the optional use of the RV Friendly symbol will be granted to any jurisdiction that submits a written request to the Office of Transportation Operations. A State may request Interim Approval for all jurisdictions in that State. Jurisdictions using devices under an Interim Approval must agree to maintain an inventory list of all locations where the devices are placed and to comply with item F at the bottom of page 1A-6 of the 2003 MUTCD, Section 1A.10 which requires:

"An agreement to restore the site(s) of the Interim Approval to a condition that complies with the provisions in this Manual within 3 months following the issuance of a Final Rule on this traffic control device. This agreement must also provide that the agency sponsoring the Interim Approval will terminate use of the device or application installed under the Interim Approval at any time that it determines significant safety concerns are directly or indirectly attributable to the device or application. The FHWA's Office of Transportation Operations has the right to terminate the interim approval at any time if there is an indication of safety concerns."

If State or local agencies elect to participate in the RV Friendly Program, they shall have a policy for selecting eligible businesses and facilities that includes at a minimum the following:

- Roadway access and egress must be hard surface, free of potholes and need to be at least 12 feet wide with a minimum swing radius of 50 feet to enter and exit the facility.
- Roadway access, egress, and parking facilities must be free of any electrical wires, tree branches, or other obstructions up to 14 feet above the surface.
- Facilities requiring short-term parking such as restaurants or tourist attractions, are required to have 2 or more spaces that are 12 feet wide and 65 feet long with a swing radius of 50 feet to enter and exit the spaces.
- Fueling facilities with canopies are required to have a 14-foot clearance, and those selling diesel fuel are required to have pumps with non-commercial nozzles.
- Fueling facilities must allow for pull-through with swing radius of 50 feet.
- For campgrounds, 2 or more spaces that are 18 feet wide and 45 feet long are required.
- Businesses must also post directional signing on their sites, as needed, to those RV friendly parking spaces and other on-site RV friendly services, so that the motorist is given additional guidance upon leaving the public highway and entering the business establishment's property.

The following design requirements shall apply:

- The design of the RV Friendly symbol is a 12-inch diameter, yellow circle with a ½-inch black border.
- The black upper case letters "RV" are inside the circle and they are 8 inches in height.
- When used, the RV Friendly symbol is located in the lower right-hand corner of the business or specific service logo in a manner in which it touches both the specific

service logo and the blue sign panel. An example is attached and included on the MUTCD website.

- Care should be taken to ensure that enough space exists so that the RV Friendly symbol does not overlap with the logos of other non-participating businesses included on the specific service sign.

State or local highway agencies requesting Interim Approval may suggest other color combination designs for FHWA consideration.

Any questions concerning this Interim Approval should be directed to Ms. Linda Brown at Linda.L.Brown@fhwa.dot.gov or by telephone at 202-366-2192.

Item 3**INFORMATION:** MUTCD – Interim Approval for Use of Clearview Font for Positive Contrast Legends on Guide Signs

September 2, 2004

Regina S. McElroy for /s/ **Vince P. Pearce**
Director, Office of Transportation Operations

HOTO-1

Division Administrators
Resource Center Directors
Federal Lands Highway Division Offices

Purpose: The purpose of this memorandum is to issue an Interim Approval for the optional use of the Clearview font for positive contrast legends on guide signs

Research on the Clearview font: The Clearview font was developed through a decade of research starting in the early 1990s. The goal of the Clearview font was to increase legibility and reduce halation of highway sign legends in comparison to that of Standard Highway Signs (SHS) Alphabets (Highway Gothic font). This research development effort resulted in final design of Clearview font letters in 2003. Clearview font letters were developed specifically to address four issues with the legibility of SHS alphabets. They are:

- Upgrade highway signing word messages to accommodate the needs of older drivers without increasing the capital letter height and the overall length and height of word messages and the signs themselves,
- Improve word pattern recognition by using mixed case words of the same size composed of lower case letters designed for highway sign applications,
- Improve the speed and accuracy of destination recognition and the legibility distance of word messages, and
- Control or minimize the halation of words displayed on high brightness retroreflective materials for drivers with reduced contrast sensitivity.

The legibility of positive contrast Clearview legends for guide signs has been researched by the Pennsylvania Transportation Institute (PTI) and the Texas Transportation Institute (TTI). This research information can be accessed via the MUTCD website (<http://mutcd.fhwa.dot.gov>)

2

Key conclusions of the research are:

- 16 percent improvement in recognition by older drivers for equal size footprint for SHS Alphabet Series D letters and Clearview-Condensed with little change in overall sign size – two PTI studies (Garvey, P.M., M.T. Pietrucha, and D. Meeker. Effects of Font and Capitalization on Legibility of Guide Signs. In *Transportation Research Record 1605*, TRB, National Research Council, Washington, DC, 1997, pp. 73-79).
- 12 percent increase in legibility for overhead and shoulder-mounted guide signs using ASTM D4956 microprismatic sheeting Types VII, VIII, or IX – TTI study.

(Gene Hawkins and Paul Carlson FHWA/TX-02/4049-1 Evaluation of Clearview Alphabet with Microprismatic Retroreflective Sheetings, 2001).

The initial research on Clearview was conducted at the Pennsylvania Transportation Institute. In two PTI studies intended for conventional road guide signs, use of an early version of the Clearview Bold improved nighttime sign reading distance by up to 16 percent when compared with the E-modified road sign typeface. For drivers traveling at 45 mph, that legibility enhancement could easily translate into 80 extra feet of reading distance, or a substantial 1.2 seconds of additional reading time. On a road with a posted speed of 45 mph, a driver is traveling at 66 feet per second. With Clearview-Bold, the desired destination legend is recognized 1.3 seconds earlier (84 feet) and with greater accuracy, giving the driver significantly more time to react to the information displayed.

By allowing a viewer to read the unique footprint of the word when displayed in upper/lowercase letters, there is an increase in accuracy, viewing distance, and reaction time. The research revealed that when the upper/lowercase Clearview-Condensed (condensed) is compared to the most commonly used all-capital-letter typeface (FHWA Series D), there was a 14 percent increase in recognition when viewed by older

drivers at night, with no loss of legibility. When the size of Clearview-Condensed was increased by 12 percent to equal the overall footprint of the uppercase display, the recognition gain doubled to 29 percent with little change in overall sign size.

The first Texas Transportation Institute (TTI) research study compared full-scale freeway guide signs using Clearview-Bold and E-modified alphabets. Pilot testing at TTI indicated that there were significant differences in the legibility of full-scale signs as compared to the smaller signs tested at PTI, when viewed at design legibility distances (40 feet per inch). The first upgrade to Clearview involved refinement of the font prior to the testing at TTI. The testing of Clearview by TTI compared the revised typeface to Series E-modified.

The researchers evaluated shoulder and overhead mounted highway guide signs on Type III retroreflective sheeting. In this study, Clearview performed no worse than, and in some cases outperformed, Series E-modified. TTI then performed a second study of the two fonts, this time using microprismatic retroreflective sheeting. The results, as presented above, demonstrated an 11 to 12 percent increase in the legibility distance for guide signs using Clearview.

3

Both the Pennsylvania and Texas Departments of Transportation have reviewed the research on the use of Clearview font for guide signs and have requested that Clearview font be allowed to be used for positive contrast guide signs.

Meeker & Associates Inc., have filed a disclaimer with the US Patent and Trademark Office disclaiming exclusive rights in the term "Clearview." The effect of this disclaimer will be to allow any jurisdiction to use the term "Clearview" by itself in connection with a typeface or font.

Conditions of Interim Approval: Spacing of Clearview font shall follow the spacing tables for Clearview, and not SHS E-modified. This includes the use of the Clearview 5-W(R) spacing tables for overhead conditions that may not accommodate a Clearview 5-W legend in replacement of existing E-modified legends. Action word messages and cardinal directions

shall remain in all upper case letters and the first upper case letter of a cardinal direction shall be 10 percent greater in height for conventional road guide signs as per Table 2E.1 through Table 2E.4 of the 2003 MUTCD for expressway/freeway guide signs. The Clearview font should not be used on negative contrast signs until research demonstrates the effectiveness.

Interim Approval for the use of Clearview font for positive contrast legend on guide signs will be granted to any jurisdiction that submits a written request to the Director of the FHWA Office of Transportation Operations. The request must state the location(s) where the devices will be used and the jurisdiction's agreement to comply with item F at the bottom of page 1A-10 of the 2003 MUTCD, part of Section 1A.10. A State may request Interim Approval for all jurisdictions in that State.

A general comparison guide for application to SHS Standard Alphabet letters is as follows:

SHS Standard Alphabet Clearview "W" series

Series B Clearview 1-W

Series C Clearview 2-W

Series D Clearview 3-W

Series E Clearview 4-W

Series E-Modified Clearview 5-W and Clearview 5-W-R*

Series F Clearview 6-W

* Clearview 5-W-R has tighter letter space than 5-W and is designed for replacement of overhead guide signs in which the 5-W is too wide for the specific application. The use of Clearview font for positive contrast guide signs provides increased legibility of highway sign word messages at the same cost of SHS Standard Alphabet letters. A research study by FHWA published in 1994 recommended a 20 percent increase in letter height of SHS Alphabets for highway signs in order to accommodate the viewing distance and reaction time requirements of older drivers. The use of the Clearview font will help in achieving this increase in sign visibility. Therefore, the FHWA is issuing Interim Approval for Clearview so that this application may be used by jurisdictions that wish to do so pending the rulemaking.

Any questions concerning this Interim Approval should be directed to Mr. Fred Ranck at fred.ranck@fhwa.dot.gov or by telephone at 708-283-3545.

4FHWA:HOTO-1:FRanck/EHuckaby:69064:8-31-04 cc: HOTO-1 HOTO-1(EHuckaby/FRanck/LLBrown) Mr. Martin Knopp, HRC Mr. Bob Garrett, NCUTCD Mr. Roger Wentz, ATSSA Mr. James Barron, ATSSA Robin Fields, HCC-40 Mr. Ken Kobetsky, AASHTO Mr. Art Breneman, PennDOT Mr. Dan Van Gilder, HFTS-15 Chron 3408 Reader 3408 DF(Interim Approvals) M:\MUTCD\INTERIM APPROVALS\IA-5 Clearview font\083004Interim Appr#8E1-3.doc

Item 4**Memorandum**

Date: August 2, 2004

Subject: INFORMATION: MUTCD – **Interim Approval for Use of the Wayside Horn System**

Reply to Attn. of: HOTO-1

From: Regina S. McElroy /s/Regina McElroy
Director, Office of Transportation Operations

To: A. George Ostensen, Associate Administrator for Safety
Division Administrators
Resource Center Directors
Federal Lands Highway Division Offices

Purpose: The purpose of this memorandum is to issue an Interim Approval for the optional use of wayside horn system (WHS) at highway-rail grade crossings.

Background Summary: The use of train horns provides an audible indication to road users of the approach of a train at a highway-rail grade crossing. Although this device provides a safety benefit to the road user, the community in close proximity to the railroad crossing can be subject to the sound impact of the train horn, which can occur any time of the day or night. To mitigate this problem, the Federal Railroad Administration (FRA) and the Federal Highway Administration (FHWA) Office of Safety have monitored over the past 10 years the development and implementation of a WHS. The WHS is located at the crossing and directed at oncoming motorists, which (1) simulates the sound and pattern of a train horn; (2) provides similar (or safer) response from road users, and (3) minimizes the audible impact on individuals located near the crossing (the WHS theory of operations is attached to this memo). Additionally, the FRA has documented an Interim Final Rule, entitled "Use of Locomotive Horns Highway-Rail Grade Crossings" (published in the *Federal Register* at 68 FR 70586 on December 18, 2003), which provides the use of train horns at public crossings and the use of the WHS. Interim Approval for the WHS is hereby granted based on FRA's Interim Final Rule, as well as current deployments and evaluations.

Provisions for the WHS:**Option:**

The wayside horn system may be installed in accordance with part 222 of title 49 of the Code of Federal Regulations (49 CFR) to provide directional audible warning at highway-rail grade crossings equipped with active traffic control devices consisting of, at a minimum, flashing lights and gates.

Standard:

The wayside horn system for use at active highway-rail grade crossings shall conform to the FRA's requirements for the wayside horn prescribed in Part 222 of 49 CFR, Appendix E. As a minimum, the wayside horn system shall be installed for each roadway approach to the highway-rail grade crossing to provide audible warning.

Guidance:

A diagnostic review should be conducted by a diagnostic team to determine the optimal placement of the wayside horn system and to ensure the correct and most effective use of the system. The diagnostic team should be composed of railroad personnel, public safety or law enforcement, engineering personnel from the public agency with the responsibility for the roadway that crosses the railroad, and other concerned parties.

The highway agency or authority with jurisdiction should consider the inclusion of remote health (i.e., status) monitoring capable of automatically notifying maintenance personnel when anomalies have occurred within the system.

The wayside horn system should comply with the same lateral clearance and roadside safety features described in the MUTCD Section 8D.01. When a wayside horn is mounted on a separate pole assembly, it should be installed no closer than 4.6m (15 ft) from the centerline of the nearest track. In addition, a wayside horn should be located where the device will have optimal results, and not obstruct the motorists' line of sight to the flashing-light signals.

Conditions of Interim Approval: Jurisdictions wishing to install the WHS under this Interim Approval of WHS must meet the following conditions:

1. The use of WHS shall comply with provisions described in the above *Provisions for the WHS*.
2. A written request shall be submitted to the Director of the Office of Transportation Operations acknowledging the jurisdiction's agreement to comply with MUTCD Section 1A.10, item F. The request must also state the location(s) where the device will be used.
3. Jurisdictions shall be responsible to notify the FRA of installation of WHS as required in 49 CFR 222, and shall inform the FHWA of such notification in their written request to FHWA for interim approval.

Any questions concerning this Interim Approval should be directed to Ms. Guan Xu at guan.xu@fhwa.dot.gov or by telephone at 202-366-5892.

References:

1. 49 CFR Part 222
2. Wayside Horn System Interim Approval Request from A. George Ostensen
3. 2003 MUTCD Section 1A.10

Attachments:

Theory of WHS Operations

WHS Research Summary

Theory of WHS Operations

The WHS system operates in conjunction with train operations. Under normal conditions at an active crossing, the train's locomotive will normally engage its horn approximately one-quarter of a mile from the crossing. The horn will continue to sound several additional times until the train enters the crossing. The WHS focuses the sound of the horn to the road user, thereby eliminating the requirement that the locomotive sound its horn from such a far distance (currently trains typically sound their horns a quarter-mile from the crossing). The WHS is located at the crossing on a pole in close proximity to the Crossbuck. Once the train has approached the crossing where the train horn would begin to blow its horn, the WHS is engaged. The WHS emits a digitized horn sound that is directed in the path of the user. Based on the location and orientation of the WHS, significant sound abatement is created for the general area surrounding the crossing, and provides a warning to road users approaching the crossing. Additionally, a visual signal is placed along the rail corridor's right-of-way in advance of the crossing to notify the locomotive engineer that the WHS is operating. Pursuant to FRA's Interim Final Rule (49 CFR 222, Appendix E), the locomotive engineer has the right to engage the onboard train horn, when it is determined that it is in the best interest in safety (for both the road user and the train).

WHS Research Summary

The effectiveness of the WHS has been studied and documented over 10 years at active highway-rail grade crossings, and has shown substantial benefits to such grade crossings. The studies were conducted by agencies/organizations such as the FRA, Volpe Center; Northwestern University; City of Richardson, Texas; Association of American Railroads; Iowa State University, and Texas Transportation Institute. Key conclusions of the studies include:

- The studies showed significant reduction (more than 50 percent) in the number of motorists' violations of the crossing gates as compared to the baseline data collected with the train horns sounding.
- The WHS was well accepted by both motorists and locomotive engineers.
- The WHS gives equal or greater audible notification as compared to train horns.
- The WHS provides a good balance between providing adequate advance notification to road users and minimizing community noise levels.
- The WHS appears to continue to be an effective alternative to the locomotive horn.

Item 5**INFORMATION: MUTCD – Interim Approval for Use of Retroreflective Border on Signal Backplates**

February 6, 2004

Regina S. McElroy /s/ *Regina McElroy*
Director, Office of Transportation Operations

HOTO-1

Division Administrators
Resource Center Directors
Federal Lands Highway Division Offices

Purpose: The purpose of this memorandum is to issue an Interim Approval for the optional use of retroreflective borders on traffic signal backplates.

Background: Section 1A.10 of the 2003 edition of the Manual on Uniform Traffic Control Devices (MUTCD) contains a new provision authorizing the Federal Highway Administration (FHWA) to issue Interim Approvals. Such approvals allow the interim use, pending official rulemaking, of a new traffic control device, a revision to the application or manner of use of an existing traffic control device, or a provision not specifically described in the MUTCD. Interim approvals are considered by the Office of Transportation Operations based on the results of successful experimentation, studies, or research, and an intention to place the new or revised device into a future rulemaking process for MUTCD revisions.

Research on Retroreflective Backplate Borders: The addition of a retroreflective border strip around the outside edge of the front surface of traffic signal backplates to enhance signal conspicuity has been thoroughly researched in the Province of British Columbia in Canada. The research over a period of 7 years is summarized in the final report for Project 216 of the National Committee on Uniform Traffic Control of Canada, and has culminated in recommended revisions to the Canadian MUTCD. This research information can be accessed via the MUTCD website (<http://mutcd.fhwa.dot.gov>). Key conclusions of the research are:

• • • •

15 percent to 24 percent reductions in total crashes, especially rear-end type crashes, after addition of the backplate borders.

Benefit/Cost Ratio of approximately 10.

Retroreflective border provides a distinctive frame around the traffic signal display at night, allowing road users to more readily locate the signal face among background lighting.

Retroreflective border assists road users in detecting the presence of a major (signalized) intersection during nighttime power outage conditions.

Additional Related Information: Section 4D.17 of the 2003 MUTCD states that "the use of a signal backplate for target value enhancement should be considered on signal faces viewed against a bright sky or bright or confusing backgrounds." It further states that "the use of backplates enhances the contrast between the traffic signal indications and their surroundings for both day and night conditions, which is also helpful to elderly drivers." Section 4D.18 states that "the front surface of backplates shall have a dull black finish to minimize light reflection and to increase contrast between the signal indication and its background." The National Committee on Uniform Traffic Control Devices (NCUTCD) has reviewed the Canadian research on this subject and has recommended to the FHWA that text be added to the next edition of the MUTCD to specifically allow the optional use of a yellow retroreflective strip no wider than 75 mm

(3 inches) around the perimeter of the face of backplates to project a rectangular appearance at night. Retroreflective backplate borders have been in widespread use for many years in many European countries and in Australia. The use of retroreflective backplate borders appears to provide positive safety

benefits at relatively low cost. Therefore, the FHWA intends to propose amending the MUTCD to specifically allow such borders in a future MUTCD rulemaking. The FHWA is issuing Interim Approval for this use so that this application may be used by jurisdictions who wish to do so pending the rulemaking.

Conditions of Interim Approval: Interim Approval for the use of a yellow retroreflective strip at least 25 mm (1 inch) wide and no wider than 75 mm (3 inches) around the perimeter of the face of signal backplates to project a rectangular appearance at night will be granted to any jurisdiction that submits a written request to the Director of the Office of Transportation Operations. The request must state the location(s) where the device will be used and the jurisdiction's agreement to comply with item F at the bottom of page 1A-10 of the 2003 MUTCD, part of Section 1A.10. A State may request Interim Approval for all jurisdictions in that State.

Please note that at this time the MUTCD does not specify minimum retroreflectivity levels for traffic control devices. However, it is known that modern headlight design limits the amount of light reflecting from devices mounted over the road. Therefore, to obtain maximum benefits from the retroreflective backplate border on overhead-mounted signal faces, jurisdictions should consider using a type of retroreflective sheeting for this border that is specifically designed for overhead locations.

Any questions concerning this Interim Approval should be directed to Mr. Scott Wainwright at scott.wainwright@fhwa.dot.gov or by telephone at 202-366-0857.

FHWA:HOTO-1:SWainwright:ds:60857:1-28-04

cc: HOTO-1 HOTO-1(EHuckaby/Swainwright/FRanck)

Mr. Martin Knopp, Resource Center

Mr. Bob Garrett, NCUTCD

Mr. Roger Wentz, ATSSA Mr. James Barron, ATSSA

Chron 3408 Reader 3408

DF(Interim Approvals)

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06-9 Proposed to Adopt G12-1 (CA), G12-2 (CA), R75-1 (CA), S22-1 (CA) and C43 (CA) signs

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

PENDING**POLICY Memorial Highway G12-1(CA), G12-2(CA)**Section 2D.49 Signing of Named Highways

Standard:

When used, the Memorial Highway (G12-1(CA), G12-2(CA)) sign shall be placed at the beginning of the highway segment memorialized by the Legislature.

G12-1 (CA)

ENGLISH UNITS

A	B	C	D	E	F
VAR	18	1	6	6&4.5E(M)	3
VAR	24	1.25	8	8&6E(M)	3

COLORS: BORDER & LEGEND - WHITE (RETROREFLECTIVE)
BACKGROUND - GREEN (RETROREFLECTIVE)

5/15/06

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

PENDING**POLICY Memorial Highway G12-1(CA), G12-2(CA)**Section 2D.49 Signing of Named Highways

Standard:

When used, the Memorial Highway (G12-1(CA), G12-2(CA)) sign shall be placed at the beginning of the highway segment memorialized by the Legislature.

G12-2 (CA)

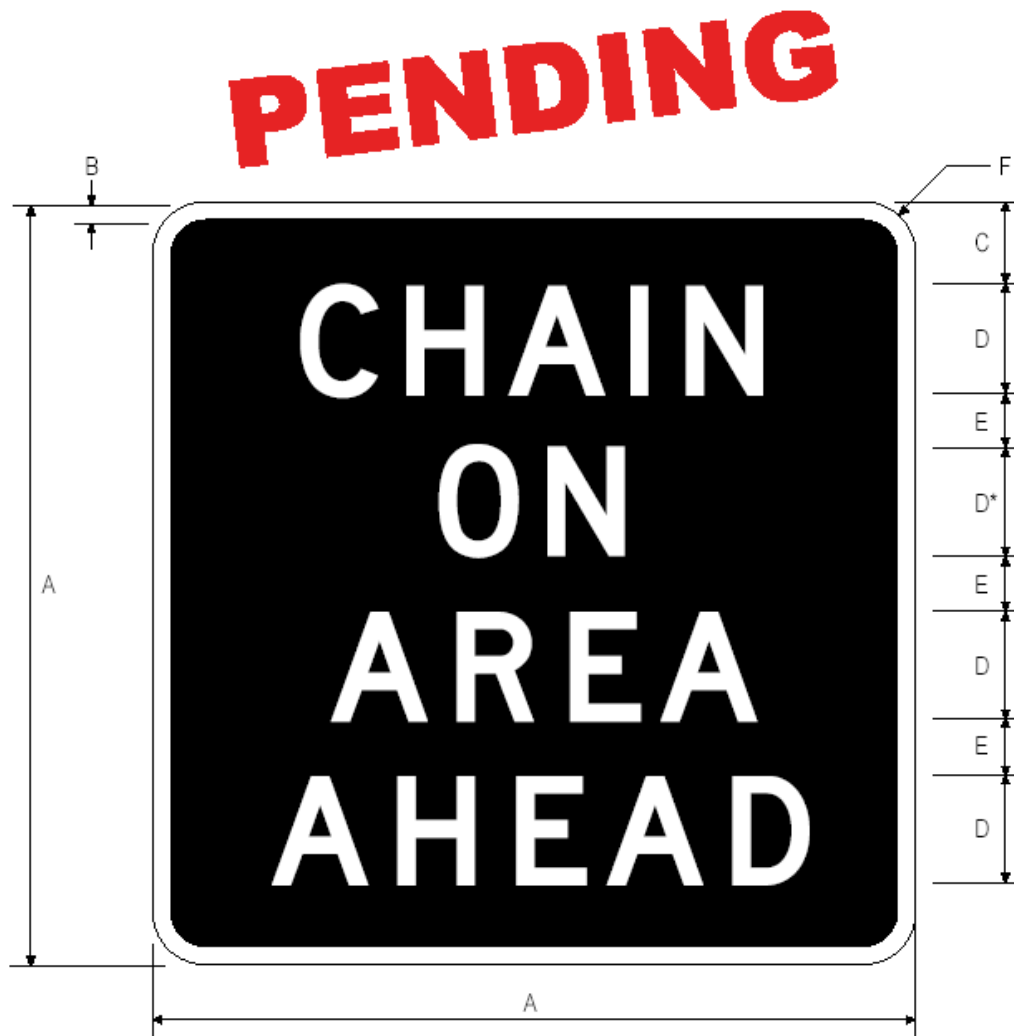
ENGLISH UNITS

A	B	C	D	E	F	G
VAR	30	1	6	6&4.5E(M)	6	3
VAR	42	1.25	9	8&6E(M)	8	6

COLORS: BORDER & LEGEND - WHITE (RETROREFLECTIVE)
BACKGROUND - GREEN (RETROREFLECTIVE)

5/15/06

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION



***Alternate Message: OFF**

R75-1 (CA)

ENGLISH UNITS

A	B	C	D	E	F
42	1	4.5	6D	3	2.625

**COLORS: BORDER & LEGEND - WHITE (RETROREFLECTIVE)
BACKGROUND - BLACK**

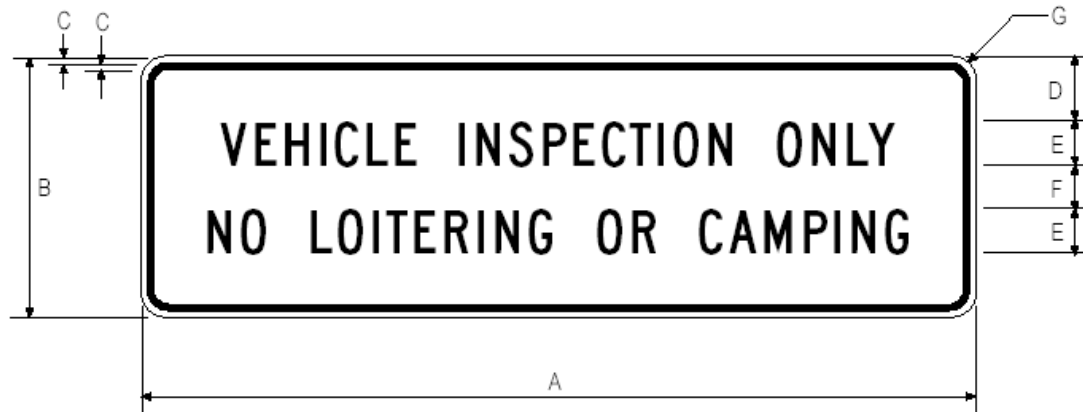
5/16/06

POLICY R75-1(CA) CHAIN ON (OFF) AREA AHEAD

Section 2B.39 Parking, Standing, and Stopping Signs (R7 and R8 Series)

Standard: When used, the CHAIN ON (OFF) AREA AHEAD (R75-1(CA)) shall be placed in advance of the area designated for installation and/or removal of tire chains.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

PENDING**S22-1 (CA)**

ENGLISH UNITS

A	B	C	D	E	F	G
48	15	.375	3.75	2.5C	2.5	1.5

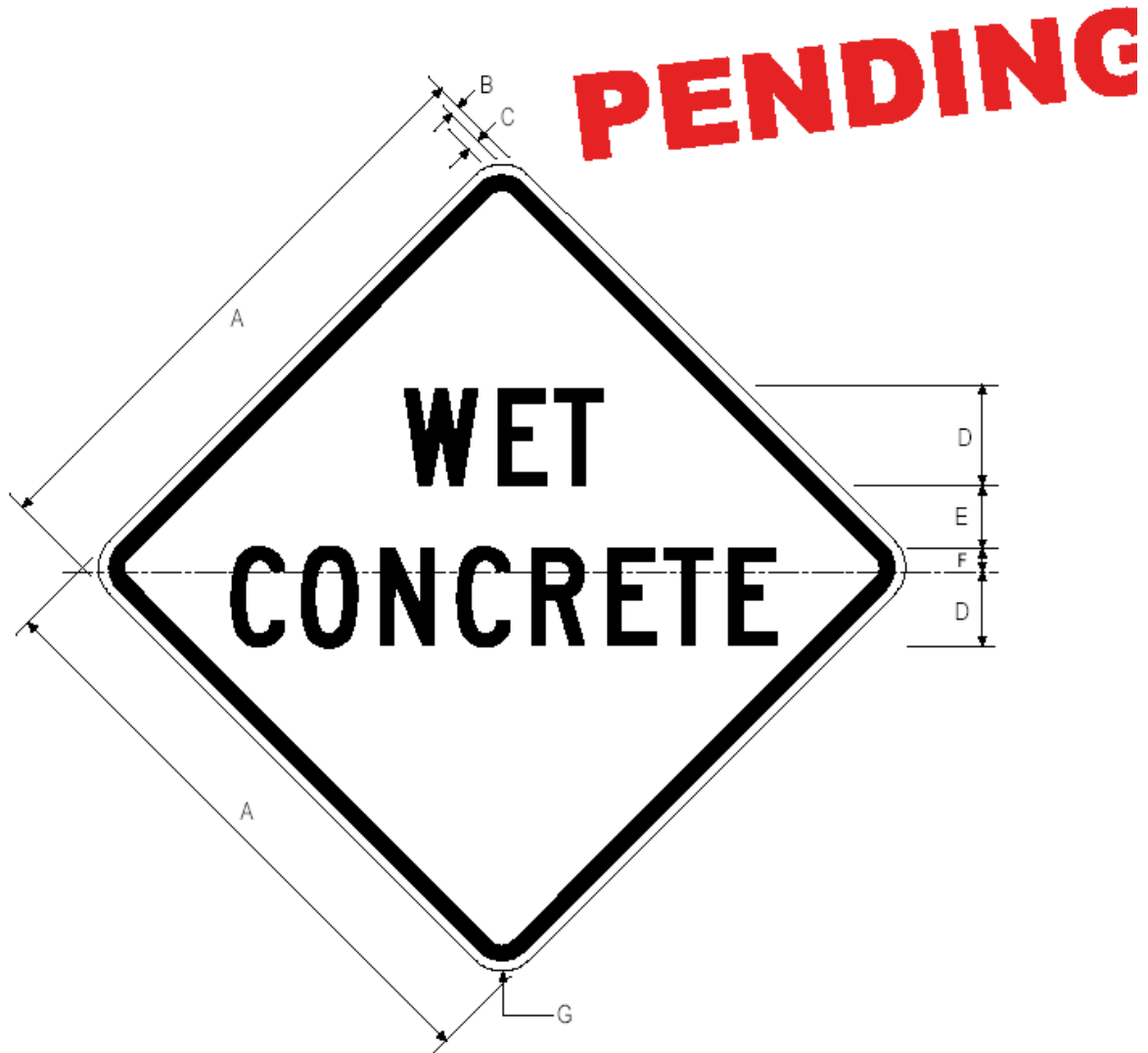
COLORS: BORDER & LEGEND - BLACK
 BACKGROUND - WHITE (RETROREFLECTIVE)

5/10/06

POLICY S22-1(CA) VEHICLE INSPECTION ONLY**Section 2D.45 General Service Signs (D9 Series)****Option:**

The VEHICLE INSPECTION ONLY (S22-1(CA)) may be placed in the area designated for brake check or safety inspection.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

**C43 (CA)**

ENGLISH UNITS

A	B	C	D	E	F	G
48	.75	1.25	8C	5	2	3

COLORS: BORDER & LEGEND - BLACK
BACKGROUND - ORANGE (RETROREFLECTIVE)

5/10/06

POLICY WET CONCRETE C43(CA)Section 6F.105(CA) OPEN TRENCH Sign (C27(CA))**Standard:**

When used, the WET CONCRETE (C43(CA)) sign shall be placed at the beginning of the pavement slab replacement work area

Guidance:

The WET CONCRETE (C43(CA)) should remain in place during the entire curing period.

Request for Experimentation:**03-6 Radar Speed (Speed Feedback) Display Sign**

The City of San Jose will present the results of the study on the effectiveness of the school radar signs.



Department of Transportation

February 16, 2006

Farhad Mansourian
Chairman CTCDC
Director of Public Works
Marin County
P.O. Box 4186
San Rafael, CA 94913

SUBJECT: CITY OF SAN JOSE RADAR SPEED (SPEED FEEDBACK) DISPLAY SIGN STUDY (03-6)

Mr. Farhad Mansourian,

San Jose is continuing to study the effectiveness of the 33 school radar speed display signs that were installed in the Fall 2003. At the June 2003 CTCDC meeting, San Jose requested an experimental designation waiver for Radar Speed Display Signs that were to be installed as a result of grant funding under the Safe Routes to School (SR2S) Grant program. The waiver was requested as San Jose had already conducted a study of the effectiveness of the radar speed display signs in 2001. After much discussion at the CTCDC meeting, it was agreed that San Jose would conduct a study to compare the effectiveness of different display messages on the signs.

The scope of the initial phase of the study in San Jose involved testing the following different modes of operation:

- | | |
|--------|--|
| Mode 1 | "SPEED LIMIT 25 MPH" |
| Mode 2 | "YOUR SPEED XX" when a vehicle exceeds 25MPH |
| Mode 3 | "SPEED LIMIT 25MPH" switching to "YOUR SPEED XX" when a vehicle exceeds 25 MPH |

During the initial study phase, the mode of operation remained consistent at any particular school. As part of this study phase, San Jose collected data before and after installation of the signs, and conducted motorist surveys for each mode of operation.

To reinforce some of the findings in the initial study phase, San Jose will be conducting a secondary study this spring at two (2) schools. The radar signs at both of these schools will be tested for each of the above modes of operation. In addition, the following 4th mode will be tested:

Farhad Mansourian
San Jose Radar Speed Display Sign Study (03-6)
February 16, 2006
Page 2

Mode 4 "SPEED LIMIT 25 MPH" switching to "SLOW DOWN"
when a vehicle exceeds 30 MPH

Except for the initial mode of operation (current mode), each sign will cycle thru a minimum 30-day period in each mode. Traffic data will be collected before and after changing the display message for each mode of operation.

San Jose will be prepared to present the results of the study on the effectiveness of the school radar signs at the Fall CTCDC meeting.

Please let me know if you need additional information before this meeting.

Sincerely,



LAURA WELLS, P.E.
Division Manager
Department of Transportation

C: Devinder Singh
Ed von Borstel

03-15 Radar Speed Sign**EXECUTIVE SUMMARY****RADAR SPEED LIMIT FEEDBACK SIGN****FREMONT, CALIFORNIA**

PROGRAM AREA Roadway Safety	PROJECT CHARACTERISTICS Innovative or Nontraditional Approach
TYPE OF JURISDICTION City	
TARGETED POPULATION General Population	JURSDICTION SIZE 210,000

PROBLEM IDENTIFICATION

In January of 2003, the Fremont City Council made a decision to de-fund its residential Traffic Calming program due to revenue shortfalls. This de-funding of the Traffic Calming program has prompted City of Fremont staff to look for new, innovative methods to reduce traffic speeds on roadways adjacent to schools and in residential neighborhoods.

The proposed Radar Speed Feedback Sign project builds on the success of using radar speed trailers that utilize similar technology to inform drivers of their speed as well as the speed limit of the street they are traveling on. In 2001, the Fremont Police Department received an average of 14 requests per month for additional radar enforcement of the speed limit from the community, school officials, and Traffic Engineering staff. The radar speed trailer was deployed to different streets throughout the City of Fremont an average of 15 days per month. To promote traffic safety and education, the City of Fremont's Police Department is available on a request basis to provide traffic safety presentations to schools and organizations. The Fremont Police Department, Traffic Engineering staff, and the School District officials meet quarterly to discuss issues and measures to improve safety and traffic circulation of streets adjacent to schools.

As with all other programs, the resources that the Police Department has to provide enforcement are also limited. The installation of the radar speed limit message signs will work to assist the Fremont Police Department with their efforts to reduce traffic speeds.

GOALS AND OBJECTIVES

1. To identify six locations for the radar speed feedback signs. City of Fremont to utilize the radar speed feedback signs to promote compliance with the posted speed limit and to collect data to warrant traffic control and traffic enforcement.
2. To change the attitude of drivers by promoting both understanding and awareness.
3. To decrease the critical (85%) speed in school zones by an average of 5-7 mph by
4. To decrease the average monthly number of traffic speeding complaints
5. To adopt the OTS Three Phase Speed Control Program. This program includes speed assessment, program publicity, automated speed awareness, and speed enforcement.
6. To begin sharing the radar speed sign computer data with the City of Fremont Police Department on a quarterly basis by September 1, 2005.

STRATEGIES AND ACTIVITIES

The first part of the project involved identifying residential street segment that has a history of speeding and was verified by speed data. Although there are many locations in Fremont with speeding issues, the six street segments (2 school frontages and 4 residential streets) selected to install these signs were determined by staff from the Traffic Calming Priority List which takes into account crash data, speed data, traffic volume data, and complaint data.

The second part of the project was to research the effectiveness of the radar speed limit feedback sign. In 1999, the City of San Jose was the first City to purchase and evaluate Radar Speed Display signs. After several modifications and attempts to re-design the sign, a design that was satisfactory to the City of San Jose staff was installed in April 2001. Data received from this initial installation was positive and demonstrated a 5-7 mph decrease in vehicle speeds during the times that the signs were operational. Based on the positive results of San Jose's project the City then pursued implementation of the radar signs project.

The third part of this project involved the selection of the radar signs. Research on six vendors was conducted to determine who could deliver a radar speed limit sign in accordance to the City specifications. Based on the City Specification requirements a vendor was selected.

Third part of the project was the purchase and installation of the signs at the approved street segments. This process was conducted through the City's standard procedures for purchasing and project construction process. The installation of the project was completed in June 2005.

The last part of the process is obtaining speed data, speeding complaint data after the installation of the project to determine its effectiveness.

RESULTS

Based on data results for the 2-3 PM hour, the 85th percentile travel speeds for the street segments decreased ranging from 1 mile per hour to 8 miles per hour. Only one street segment, Fernald Street, resulted in an increase of the traffic speeds by 1 mph. Additional data for Fernald Street indicates that the 24-hr. 85th percentile speed remained at 32 mph for before and after project conditions.

For Hilo Street, the data shows a favorable 8-mph decline for before and after traffic speed conditions. The City believes the radar sign at this location needs to be relocated more towards the middle of the street segment. Due to sidewalk street trees obstructing sight distance mid-block along Hilo Street, the radar sign was installed near the entrance of the street segment where the speeds are lower. Moving the radar sign closer to the middle of the street segment would give a better indication of the effectiveness of the sign. The City is considering allocating additional funds to the project to relocate this sign and also to remove 2 to 3 trees that would obstruct the visibility of the radar sign location.

The remaining four street segments indicates the traffic speeds resulted in a reduction of the traffic speeds ranging from 1 mph to 7 mph. For these locations the radar signs were effective in providing driver awareness and has resulted in lower traffic speeds. Based on these initial results the City will continue to monitor the operations of the radar signs adjusting the radar signs hours of operation to target the highest peak hours of noncompliance. The travel speed data will be provided to the City's Police Department on a quarterly basis for traffic enforcement on these street segments. Overall the City

FUNDING

Section 157: \$63,727.50

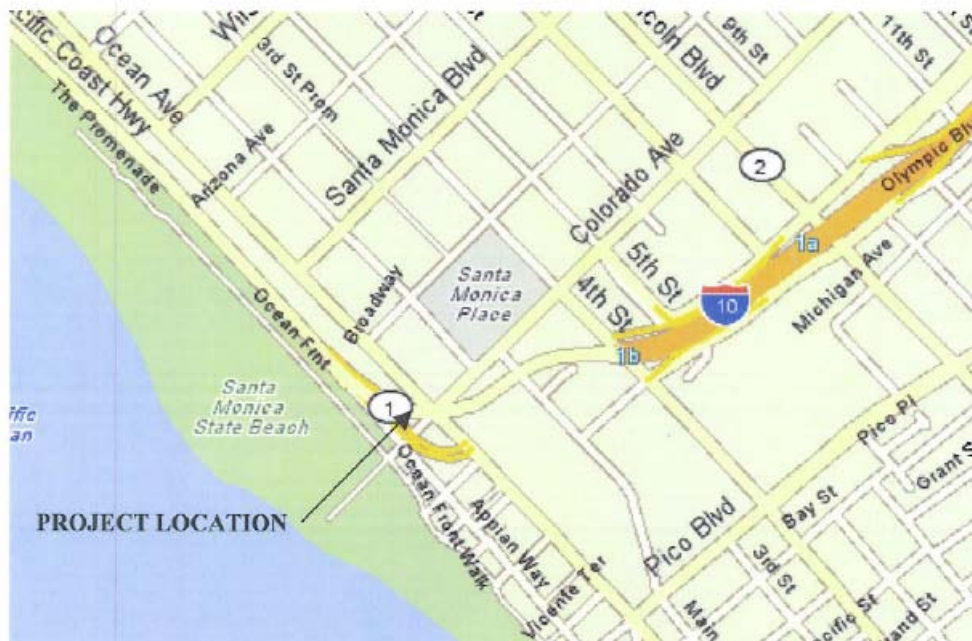
CONTACT

Rene C. Dalton
Associate Transportation Engineer
City of Fremont
39550 Liberty Street
Fremont, CA 94537
(510) 494-4535

believes the signs have been effective in reducing traffic speeds. The radar signs enable the City to gather data and monitor what traffic is doing out in the streets. This information is useful to our Police Department which is responsible for implementing the City's traffic enforcement program.

99-13 Illuminated Pavement Markers on Median Barriers**PROJECT EVALUATION STUDY****Pacific Coast Highway (LA-001)**

From PM 35.10 to 35.30



August 21, 2006

PROJECT EVALUATION STUDY

APPROVAL RECOMMENDED BY:

SAMEER HADDADEEN, FUNCTIONAL MANAGER
Office of Traffic Investigations

Date

SAMEER HADDADEEN, OFFICE CHIEF
Office of Traffic Investigations

Date

This Project Evaluation Study has been prepared under the direction of the following registered civil engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.

SON DAO, REGISTERED CIVIL ENGINEER

Date

PROJECT EVALUATION STUDY

I INTRODUCTION

The McClure Tunnel on Route 1 or Pacific Coast Highway (PCH) in the City of Santa Monica, Los Angeles, conveys four lanes, two in each direction separated by a concrete median barrier and no shoulders. This portion of PCH is subject to higher than average accident rates. It is on a curved alignment and is illuminated. The speed limit is 45 mph but 35 mph warning signs have been posted. Reflective markers were installed on the median but most of the markers were displaced by vehicles colliding with the median barrier. It is theorized that the reflective markers were not effective since the headlights need to be on for the markers to reflect light. The visibility issue is more noticeable during daylight hours when motorists enter the tunnel from a bright environment and cannot adjust to the level of tunnel lighting in time to negotiate the curve.

It was proposed that the markers need to be a light source rather a reflective object to be effective.

II THE PROJECT

The project consisted of installing illuminated pavement markers on the top of the concrete median barrier (Type 60). The spacing is at 25 foot intervals. The markers are powered by an inductive system so the displacement of any number of markers would not disable the system. The cable power source would not have a physical connection with the markers and would be installed in a shielded position on the median so it would not be subject to damage from traffic collisions. The markers would be flashing 24 hours a day. The cost of the project was \$88,187. It was completed on November 10, 2003.

Unfortunately, on about December 31, 2004, the system became disabled because of an errant vehicle striking the median. The project was not constructed according to plans because of construction difficulties with installing the cable in a shielded location.

III TRAFFIC DATA

A. Traffic Volume

The traffic volume in the tunnel is 65,000 vehicles per day.

B. Accidents before the Project

There were 12 accidents involving a vehicle striking the median within the 18 month period before the illuminated markers were installed. This is an average of 0.67 accidents per month. There were 39 total accidents with an average of 2.17 total accidents per month.

C. Accidents after the Project

There were 6 accidents involving a vehicle striking the median within the 13 month period after the illuminated markers were installed. This is an average of 0.46 accidents per month. There were 22 total accidents with an average of 1.77 total accidents per month.

IV BEFORE AND AFTER COMPARISON

Comparison of the before and after data indicates that the accident rates for vehicles striking the median went down from 0.67 accidents per month to 0.46 accidents per month after the illuminated markers were installed. This reflects a 31 percent decrease. The total accident rates were also down. This is encouraging and leads us to believe that the illuminated markers are beneficial in preventing median collision accidents, but also other types of accidents as well. The other type of accidents went down probably because traffic tended to stay controlled within their lanes with the illuminated markers to guide them through the curve in the tunnel.

One bit of caution is that the study period is shorter than desirable and the differences between the before and after data could have been random rather than due to the improvements. It is suggested that more data be collected before a conclusive judgment is made.

V CONCLUSIONS

From the data shown herein, it appears that the illuminated markers mounted on the median were effective in preventing vehicles from striking the median. Unfortunately, the project was not built according to plans and the system is not currently operating because of damage caused by vehicles striking the median. The plans specified a shielded system, but due to construction difficulties the system installed was exposed to vehicles. It seems that the biggest obstacle is to construct an illumination system that is durable and will withstand vehicles striking the median. The system will be repaired with a shielded system to increase the durability of the illuminated markers.

It is desirable to obtain more data and do a longer study period, but circumstances prevented us from doing a longer study. We are encouraged by the results and although it is not possible to come to a final conclusion from the limited study period, we are enthused by the results and can recommend further use and testing.

Lastly, stating the obvious, tunnels on a curved alignment should be avoided whenever possible.

VI PROJECT PERSONNEL

This project was done through the efforts and support of the following:

MEL ARAKI, Project Engineer
Office of Traffic Investigations

CalNet 8-647-2909
(213) 897-2909

SON DAO, Project Engineer
Office of Traffic Investigations

CalNet 8-647-0273
(213) 897-0273

SAMEER HADDADEEN, STE
Office of Traffic Investigations

CalNet 8-647-9102
(213) 897-9102

STEVE LEUNG, Chief
Office of Traffic Investigations

CalNet 8-647-0266
(213) 897-0266

ROY FUKUMOTO, Design Manager
Office of Traffic Design

CalNet 8-647-4291
(213) 897-4291

ALI ZAGHARI, Chief
Office of Traffic Design

CalNet 8-647-0266
(213) 897-0266

ED ANDRAOS, Project Manager
Office of Project Management

CalNet 8-647-1582
(213) 897-1582

LUU NGUYEN, Project Advisor
Office of Traffic Investigations

CalNet 8-647-5639
(213) 897-5639

Reza Ameri , STE
Office of Construction

(310) 649-1821

Ramon Robillos, Resident Engineer
Office of Construction

(310) 649-1821

VII ATTACHMENTS

- Attachment 1 - Construction Details
- Attachment 2 - Photo
- Attachment 3 - TASAS Table B



Attachment 2

02-15 Radar Guided Dynamic Curve Warning Sign

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY

ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION

50 HIGUERA STREET
SAN LUIS OBISPO, CA 93401-5415
PHONE (805) 549-3101
FAX (805) 549-3329
TDD (805) 549-3259
<http://www.dot.ca.gov/dist05/>



*Flex your power!
Be energy efficient!*

August 7, 2006

Mr. Gerry Meis
Office Chief, Signs Delineation and Permit Branch – MS 36
California Department of Transportation
1120 N Street
Sacramento, CA 95814

REPORT ON EXPERIMENTAL USE OF A NON-STANDARD TRAFFIC CONTROL DEVICE – RADAR GUIDED DYNAMIC CURVE WARNING SYSTEM

The California Department of Transportation (Department) requested to the California Traffic Control Devices Committee (CTCDC) for permission to conduct an experiment using a Radar Guided Dynamic Curve Warning System (DCWS) as a non-standard traffic control device. CTCDC approved this system for experimentation in December 2002.

1. PROBLEM STATEMENT AND PROPOSAL

Route 17 is a four-lane highway in Santa Cruz County and is the main access from Route 1 in the City of Santa Cruz to the Route 280/880 junction. Route 17 has a rural feel with minimal or no shoulders in some areas. The City of Santa Cruz attracts weekend motorists that are not familiar with the curvature of Route 17. Many motorists heading southbound are descending the summit at high rates of speed and are not able to judge the tight radius curve that follows the tangent.

At the project location exists a "Mokowitz style" curve warning (W1-2a) sign prior to the curve with a 45-mph speed advisory. Dual flashing beacons were installed on the W1-2a Spring 2001.

The collision rate for this curve prior to the installation of the DCWS over five (5) years had been higher than the statewide average for similar curves. The actual collision rate from May 1, 1998 to April 30, 2003 was 2.69 collisions per million vehicle miles (MVM) traveled while the statewide average for similar facilities is 1.65 collisions per MVM.

The Department requested California Traffic Control Devices Committee (CTCDC) to participate in the experimentation of a Radar Guided DCWS. The DCWS consists of a Changeable Message Sign (CMS), a radar speed detection unit, and a Closed Circuit Television (CCTV) camera. The CMS displays a message similar to "45 MPH Curve Ahead". Using the installed radar, the sign would then switch to "Your Speed, 70 MPH" to warn the driver that they are approaching the curve at a high rate of speed. The CCTV camera is used to verify the CMS functions.

Report on Experimental Use of Non-Standard Traffic Control Device
Radar Guided Dynamic Curve Warning System

Page 2

2. SCHEDULE

- | | |
|-----------------------|---|
| • CTCDC Consideration | December 2002, Approved for experimentation |
| • Project Bids Opened | May 2003 |
| • Project Accepted | February 2004 |
| • Experimental Period | February 2004-August 2005 |

3. RESULTS SUMMARY

Speed surveys were completed prior to the installation of the Dynamic Curve Warning System in January 2003. These surveys showed an 85th percentile speed in the southbound direction of 66 miles per hour. Shortly after installation of the DCWS a speed survey was completed showing the 85th percentile speeds had dropped to 62 mph. A more recent speed survey completed in March of 2006 has shown speeds have continued to drop with the 85th percentile at 59 mph.

Collision information was collected for the five years proceeding the installation of the Dynamic Curve Warning System, and for eighteen months following construction. The collision data following the installation of the DCWS included a storm-related landslide and a tree in the roadway collisions. Also during this time, an Open Grade Asphalt Concrete (OGAC) overlay was placed in the project limits southbound. The OGAC was installed summer of 2004 with construction completed 9/1/2004.

COLLISION RATE (per million vehicle miles)		
STATEWIDE AVERAGE (for similar facilities)	BEFORE (5-years prior to installation: May 1998/April 2003)	AFTER (18 months after acceptance: February 2004/August 2005)
1.65	2.69	1.57

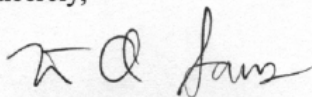
Although there were factors during this "after" period, in addition to the Dynamic Curve Warning System, the District generally feels there has been a safety benefit.

4. CONCLUSION

The District feels the installation was effective and would support evaluation and installation at other similar types of locations. This location will continue to be monitored.

If you have any questions or need further information, please do not hesitate to call me at (805) 549-3017.

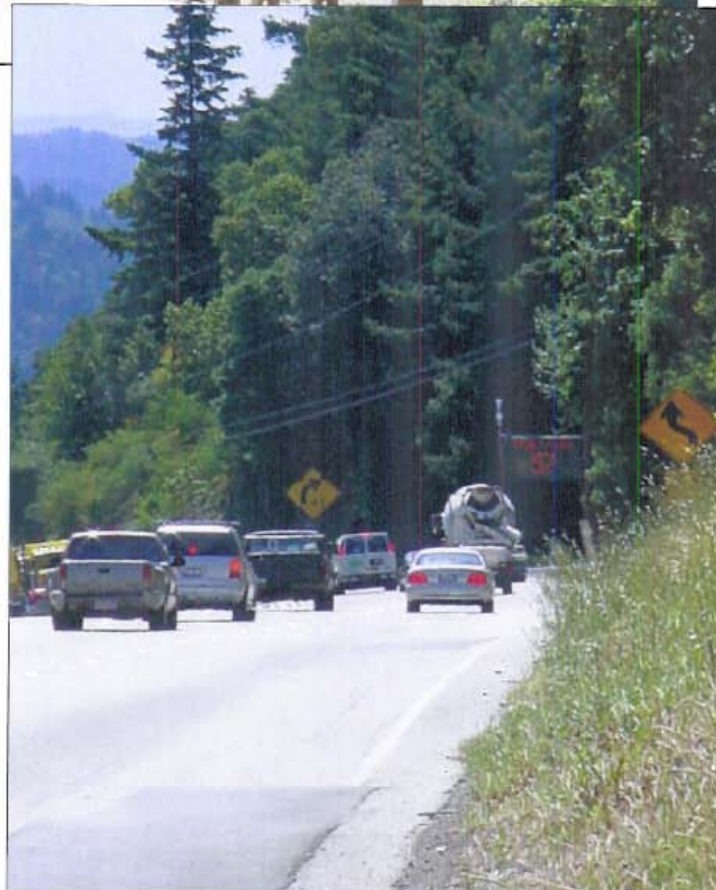
Sincerely,



Nevin Q. Sams
District Traffic Safety Engineer

Attachment

**Woodwardia - Dynamic Curve Warning System
(05-SCR-017-PM 11.1/11.3 Southbound)**



Discussion Items:**06-10 Expedited Process to Adopt Word Message Signs****Section 1A.03 Design of Traffic Control Devices****Guidance:**

Devices should be designed so that features such as size, shape, color, composition, lighting or retroreflection, and contrast are combined to draw attention to the devices; that size, shape, color, and simplicity of message combine to produce a clear meaning; that legibility and size combine with placement to permit adequate time for response; and that uniformity, size, legibility, and reasonableness of the message combine to command respect.

Standard:

All symbols shall be unmistakably similar to or mirror images of the adopted symbol signs, all of which are shown in the “Standard Highway Signs” book (see Section 1A.11). Symbols and colors shall not be modified unless otherwise stated herein. All symbols and colors for signs not shown in the “Standard Highway Signs” book shall follow the procedures for experimentation and change described in Section 1A.10.

Guidance:

Aspects of a device’s design should be modified only if there is a demonstrated need.

Support:

An example of modifying a device’s design would be to modify the Side Road (W2-2) sign to show a second offset intersecting road.

Standard:

Except as noted in the Option below, highway agencies shall not develop word message signs. In accordance with CVC Section 21401, only word message signs conforming to Department of Transportation standards and specifications shall be placed on streets and highways.

The Following Guidance and first paragraph of Option are proposed to add :

Guidance:

If a highway agency has a need for a word message sign that is not allowed per this California MUTCD nor is it allowed per the option below, the agency should submit a request to the California Traffic Control Devices Committee (CTCDC) per Section 1A.10.

Option:

The CTCDC may recommend to Caltrans to develop word message signs, specifications and standards with out going through the Section 1A.10 experimental process.

Highway agencies may develop word message signs to notify road users of special regulations or to warn road users of a situation that might not be readily apparent. Unlike symbol signs and colors, new word message signs may be used without the need for experimentation. Highway agencies may develop place/facility name or day, date, time portion of the word message on signs to notify road users of special events/circumstances or to warn road users of a situation that might not be readily apparent. Unlike symbol signs and colors, these place/facility name or day, date, time modified word message signs may be used without the need for experimentation. With the exception of symbols and colors, minor modifications in the specific design elements of a device may be made provided the essential appearance characteristics are preserved. Although the standard design of symbol signs cannot be modified, it may be appropriate to change the orientation of the symbol to better reflect the direction of travel.

06-11 Alternative to the Approved Bicycle Pavement Marking

Marin County has asked me to place this topic under the discussion items.

The following logo is a mish mash of W11-1 and W16-1 signs and to be used as pavement marking instead.

The idea is to give more emphasis on the presence of bicyclist for a roadway that does not have enough width for either a bike lane or "share lane marking" (as used by San Francisco).

The logo has a yellow pavement marking background and black lettering stencil as shown (as is) to be painted at every block where bicyclist use is high.



06-12 No Parking Signs

The City of San Francisco want to discuss signs which are not covered in the CA MUTCD. For detail see Attachment "A".

06-13 Proposal to Amend Section 7B.08 and 7B.12

Dear CTCDC—

Regarding the Final Draft of the CA MUTCD, the City of Santa Ana is requesting that the committee consider adding an option to the below standard 7B.08, CA Standard to replace the first sentence with two sentences as follows:

The School Advance Warning Assembly D(CA) shall be used in advance of any School Crosswalk Warning Assembly B(CA), School Crosswalk Warning Assembly E(CA) or the School Speed Limit Assembly C(CA). As an option, the Reduced Speed School Zone Ahead sign may be installed in advance of the School Speed Limit Assembly C(CA) instead of the Assembly D(CA) sign.

See relevant section below.

Section 7B.08 School Advance Warning Assembly (S1-1 with Supplemental Plaque)

Guidance:

The School Advance Warning assembly (see Figure 7B-1) should be installed in advance of locations where school buildings or grounds are adjacent to the highway, except where a physical barrier such as fencing separates school children from the highway.

Standard:

The School Advance Warning assembly shall be used in advance of any installation of the School Crosswalk Warning assembly (see Figure 7B-2), or in advance of the first installation of the School Speed Limit assembly (see Figure 7B-3).

If used, the School Advance Warning assembly shall be installed not less than 45 m (150 ft) nor more than 210 m (700 ft) in advance of the school grounds or school crossings.

If used, the School Advance Warning assembly shall consist of a School Advance Warning (S1-1) sign supplemented with a plaque with the legend AHEAD (W16-9p) or XXX METERS (XXX FEET) (W16-2 or W16-2a) to provide advance notice to road users of crossing activity.

Standard:

The School Advance Warning Assembly D(CA) shall be used in advance of any School Crosswalk Warning Assembly B(CA), School Crosswalk Warning Assembly E(CA) or the School Speed Limit Assembly C(CA).

The School Warning Assembly A(CA) shall be used on streets with prima facie 40 km/h (25 mph) speed limits that are contiguous to a school building or school grounds.

The SCHOOL (S4-3) plaque shall not be used alone.

Guidance:

If used, the School Warning Assembly A(CA) should be posted at the school boundary. Refer to CVC 22352.

Option:

If used, the School Warning Assembly A(CA) may be posted up to 150 m (500 ft) in advance of the school boundary. Refer to CVC 22352.

The City of Santa Ana further requests that the committee consider adding the same alternative to the below Option in Section 7B.12. The Sentence is proposed to be revised as follows:

The Reduced Speed School Zone Ahead (S4-5, S4-5a) sign (see Figure 7B-1(CA)) may be used to inform road users of a reduced speed zone when engineering judgment indicates that advance notice would be appropriate for the School Advance Warning Assembly D(CA) or the School Speed Limit Assembly C(CA).

See relevant section below. If the goal is to give drivers additional notice of the reduced school speed zone ahead before it becomes effective, the clearest way to do that is to install the sign that specifically spells-out exactly that message (i.e. the Reduced Speed School Zone Ahead (S4-5, S4-5a) sign) in advance of the School Speed Limit Assembly C(CA).

Section 7B.12 Reduced Speed School Zone Ahead Sign (S4-5, S4-5a)

Option:

The Reduced Speed School Zone Ahead (S4-5, S4-5a) sign (see Figure 7B-1 [7B-1\(CA\)](#)) may be used to inform road users of a reduced speed zone when engineering judgment indicates that advance notice would be appropriate [for the School Advance Warning Assembly D\(CA\)](#).

Standard:

If used, the Reduced Speed School Zone Ahead sign shall be followed by a School Speed Limit sign or a School Speed Limit assembly [Assembly C\(CA\)](#).

The speed limit displayed on the Reduced Speed School Zone Ahead sign shall be identical to the speed limit displayed on the subsequent School Speed Limit sign or School Speed Limit assembly

[Assembly C\(CA\)](#).

Then in Figure 7B-3(CA), it is recommended that the Reduced Speed School Zone Ahead sign be added as an option to the Assembly D sign in two places in this figure.



S4-5



S4-5a

Figure 7B-3(CA). Example of Signing for School Area Traffic Control with School Speed Limits

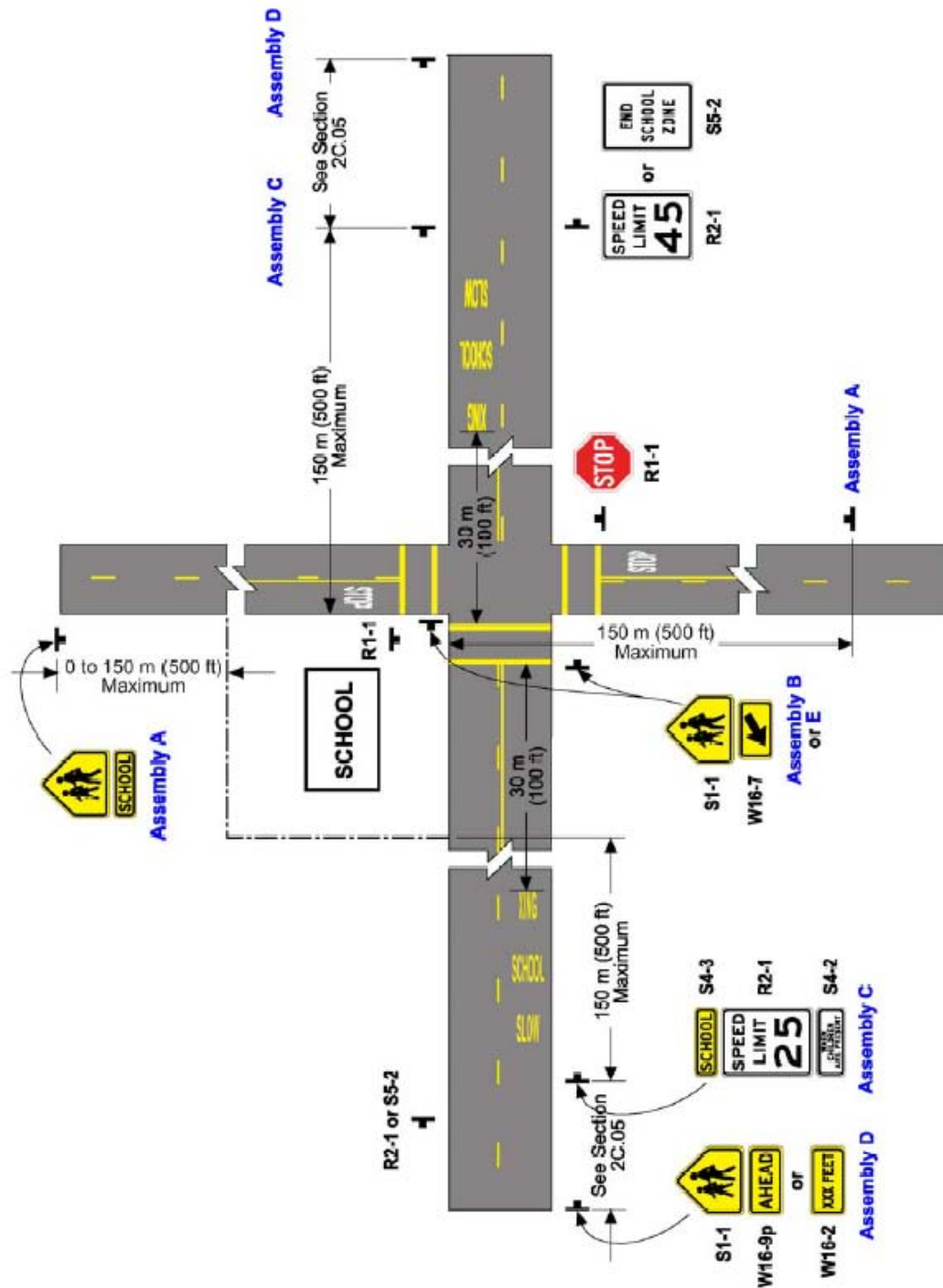
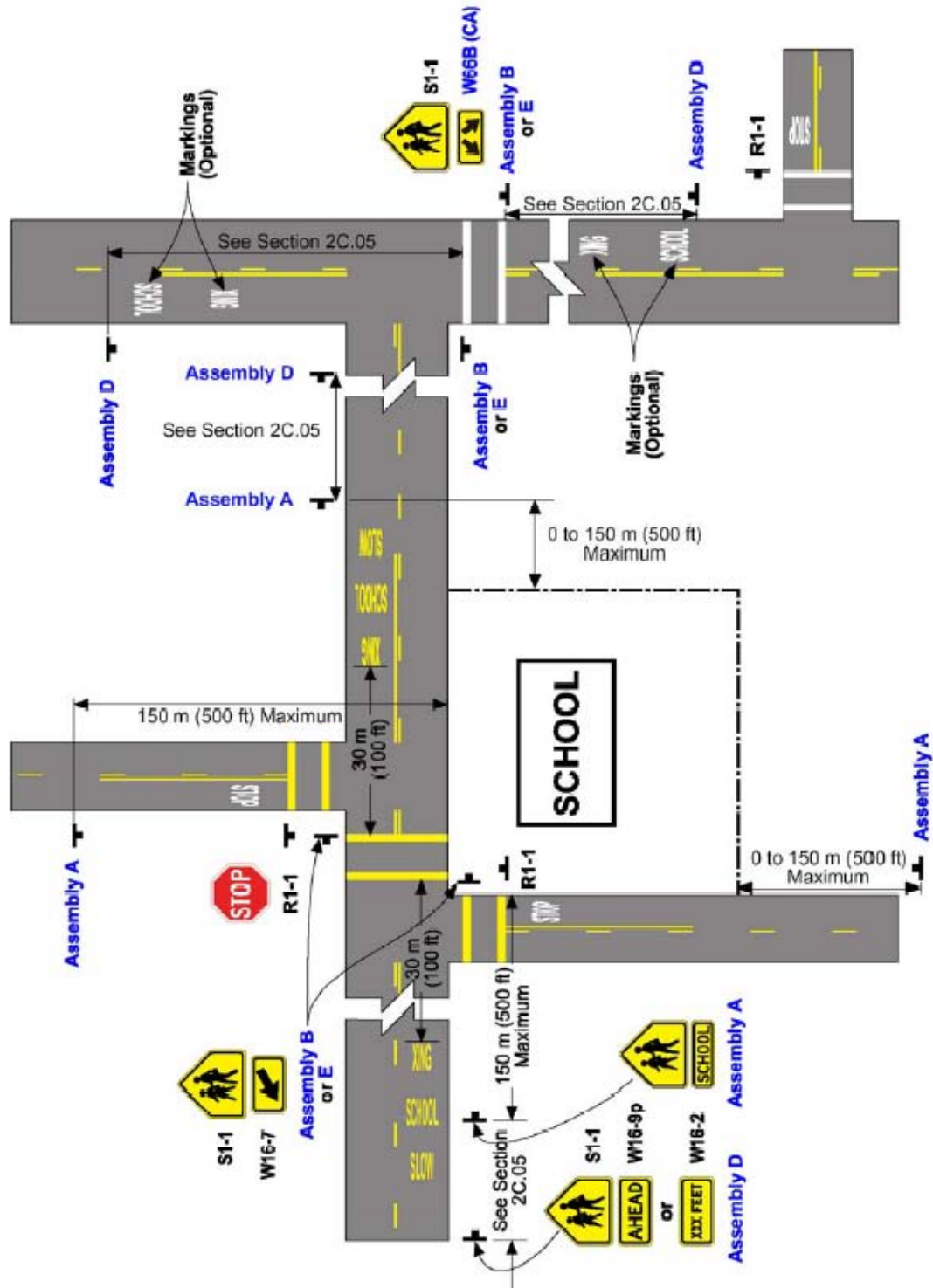


Figure 7B-2(CA). Example of Signing for School Crosswalk Warning Assembly



Thank you for your consideration of these comments which come from several of our engineers in the office.

Sincerely,

Monica M. Suter, P.E., P.T.O.E.
Senior Civil Engineer
City of Santa Ana
Public Works Agency
Traffic and Transportation Engineering

On behalf of the City....

Information Items:**03-14 Numbering of Signalized Intersections****COACHELLA VALLEY ASSOCIATION of GOVERNMENTS**

Blythe • Cathedral City • Coachella • Desert Hot Springs • Indian Wells • Indio • La Quinta • Palm Desert • Palm Springs • Rancho Mirage
County of Riverside • Agua Caliente Band of Cahuilla Indians • Cabazon Band of Mission Indians • Torres Martinez Desert Cahuilla Indians

July 28, 2006

Devinder Singh
Executive Secretary for the CTCDC-MS 36
California Department of Transportation
P.O. Box 94284
Sacramento, CA 94274-0001

Subject: Twelve Month Status Report for Highway 111 Signal Signs Project

Dear Mr. Singh:

As a condition of approving the Highway 111 Signal Signs Project, at your CTCDC meeting of September 23, 2003, the board required two reports on the status of the project, the first after six months. Work on the Highway 111 Signal Signs Project was completed on May 13, 2005, and the six-month report was submitted, under CVAG letterhead, dated September 28, 2005. At that time supervision of the Highway 111 Signal Signs Project was transferred from CVAG to the Palm Springs Desert Resorts Convention and Visitors Authority (CVA). The CVA has now completed the survey and information collection process in order to submit the required, and final, twelve-month status report for the Highway 111 Signal Signs Project, attached for your review.

I believe you will find that the twelve-month status report submitted by the CVA accurately reflects the positive impact of this project. Should you require anything further, please contact me.

Very truly yours,

A handwritten signature in dark ink, appearing to read "John M. Wohlmuth".

John M. Wohlmuth
Executive Director


xc: Jacob Babico, County of San Bernardino
Terry Henderson, Councilmember, City of La Quinta
Jeff Beckelman, PSDRCVA



Palm Springs Desert Resorts
CONVENTION AND VISITORS AUTHORITY

MEMORANDUM

TO: California Traffic Control Devices Committee (CTCDC)

FROM: Jeff B. Beckelman, President & CEO 
Palm Springs Desert Resorts Convention and Visitor's Authority

DATE: June 27, 2006

SUBJECT: Final Report on Non-Standard signs on the signal poles on the State Highway portion of Highway 111.

Please excuse the tardiness in the completion of this final report regarding the installation of non-standard signs on the signal poles on the State Highway portion of Highway 111. The Palm Springs Desert Resorts Convention and Visitor's Authority was reorganized and a new executive management team was brought in just six (6) months ago. This reorganization caused a delay in submitting this final report.

As you know, the Coachella Valley Association of Governments (CVAG) obtained approval for this Demonstration Project from the CTCDC in September 2003. CVAG obtained a CALTrans Encroachment Permit to complete the sign installation work in January 2005 and the work was completed in May 2005. CVAG submitted the first of two (2) required follow-up reports on the status of the project in November 2005.

As President and CEO of the PSDRCVA I submit this final report to you that includes information gathered from an informal study conducted by our staff. We surveyed industry members and have attached letters of feedback from area residents and businesses on the project's effectiveness.

Also included are several copies of surveys and responses from Coachella Valley PSDRCVA member businesses. We received thirty two (32) responses from an e-mail base of 786 primary members or a 4% return. Fifty (50) percent of the responses were positive and supportive of the project.

Many responses included comments that the project could have been improved during the completion and early implementation phases had there been more industry awareness. Most responses advised our organization to continue to publicize the signs and to encourage our members to better utilize them.

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70-100 Highway 111 • Rancho Mirage, CA 92270 • TF: 800-967-3767 • T: 760-770-9000 • F: 760-770-9001 • palmsspringsusa.com
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Also attached is a letter from Milton W. Jones, Publisher, Palm Springs Life and the producer of a four (4) page fold-out area map. Mr. Jones reports that their company included the signs within their map and that they have received "a number of positive comments" regarding the numbered marker system.

Finally, I wanted the CTCDC to know that the PSDRCVA will boost our efforts to build awareness of the signs by including messages to our members about the system in our weekly e-mail newsletter.

Thank you for your interest and commitment to this effort. We appreciate your help in making it easier for our guests to navigate throughout The Desert.

Palm Springs Life

California's Prestige Magazine

303 NORTH INDIAN CANYON DRIVE (92262) / P.O. BOX 2724 / PALM SPRINGS, CA 92263 / TEL (760) 325-2333
FAX (760) 325-7008 / INTERNET: www.palmspringslife.com / E-MAIL: mitt@palmspringslife.com

March 2, 2006

Ms. Terry Henderson
Palm Springs Desert Resorts
Convention & Visitors Authority
70-100 Highway 111
Rancho Mirage, CA 92270

Dear Terry:

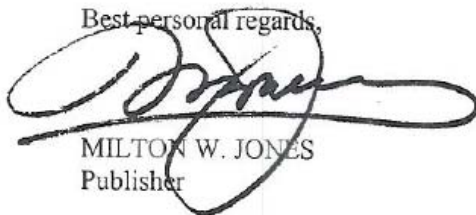
I wanted to call to your attention that we have received a number of positive comments concerning our upgrading of the 4-page, fold-out map since we added the Highway 111 numbered marker system for primary streets that intersect Highway 111 throughout the valley and Palm Canyon and East Palm Canyon Drives in Palm Springs.

We print over 95,000 copies a month of the map that are distributed to high visitor traffic points throughout the Coachella Valley, plus it is inserted in all of the subscription and newsstand sales of *Palm Springs Life* magazine.

Thank you again for spearheading this amenity for our visitors, and even our locals who use our map to navigate our desert.

Please find enclosed a current copy of *Palm Springs Life* magazine in which the gatefold Desert Guide map is inserted.

Best personal regards,



MILTON W. JONES
Publisher

MWJ:bw



June 1, 2006

Mr. Milton W. Jones
Palm Springs Life
303 N. Indian Cyn.
Palm Springs, CA 92262

Re: Palm Springs Life Desert Guide Map

Dear Mr. Jones,

I'm writing to compliment you and your publication on your PSL Desert Guide. In particular, the comprehensive map that is included in the magazine. As I'm sure you're aware, during our event we host 300-400 guests from all over the world. These guests include executives from all over the food industry, major sponsors and LPGA professionals. Even though these guests have been to the valley before, its important to provide an all-inclusive map given the growth year after year.

The fact that the streets are numbered on the main valley map is a huge benefit. In addition, the special points of interest on the Palm Desert and Palm Springs sections make our job especially easy to navigate our guests all over the desert.

Many thanks to you and your publications for making our job easier!

Sincerely,

A handwritten signature in black ink, appearing to read "Gabriel Coddington".

Gabriel Coddington
Tournament Operations Manager

Highway 111 Signal Signs Project

The intent of the Signal Sign Project is to provide a simple method for the many tourists and other visitors to the Coachella Valley to find their way safely and efficiently along the most heavily traveled roadway through our cities. The project provided for installing sequentially numbered signs mounted on signal poles along Highway 111 (Palm Canyon/ East Palm Canyon), from Palm Springs to Indio, to provide assistance in directing out-of-town visitors.

SIGN NO.	ARTERIAL	CROSS STREET	CITY
1	Highway 111	Gateway Dr	Palm Springs
2	Highway 111	Tramway Road/San Rafael	Palm Springs
3	Highway 111	Racquet Club Rd.	Palm Springs
4	Highway 111	Vista Chino	Palm Springs
5	N. Palm Canyon	Tachevah Dr./ Via Lola	Palm Springs
6	N. Palm Canyon	Tamarisk Rd.	Palm Springs
7	N. Palm Canyon	Granvia Valmonte	Palm Springs
8	N. Palm Canyon & Indian Canyon	Alejo Rd.	Palm Springs
9	N. Palm Canyon & Indian Canyon	Amado Road	Palm Springs
10	N. Palm Canyon & Indian Canyon	Andreas Road	Palm Springs
11	N. Palm Canyon & Indian Canyon	Tahquitz Canyon Way	Palm Springs
12	N. Palm Canyon & Indian Canyon	La Plaza	Palm Springs
13	N. Palm Canyon & Indian Canyon	Arenas Road	Palm Springs
14	N. Palm Canyon & Indian Canyon	Baristo Road	Palm Springs
15	N. Palm Canyon & Indian Canyon	Ramon Road	Palm Springs
16	N. Palm Canyon	Camino Parocela	Palm Springs
17	N. Palm Canyon	Sunny Dunes Rd.	Palm Springs
18	N. Palm Canyon	Mesquite Ave.	Palm Springs
19	N. Palm Canyon	Morongo Rd.	Palm Springs
20	N. Palm Canyon	S. Palm Canyon Dr	Palm Springs
21	E. Palm Canyon	Camino Real	Palm Springs
22	E. Palm Canyon	Sunrise Way	Palm Springs
23	E. Palm Canyon	Smoke Tree Ln/Cerritos Rd	Palm Springs
24	E. Palm Canyon	Barona Rd/Farrell Dr	Palm Springs
25	E. Palm Canyon	Araby Dr/Escoba Dr	Palm Springs
26	E. Palm Canyon	Cherokee Wy	Palm Springs
27	E. Palm Canyon	Gene Autry Trail	Palm Springs
28	E. Palm Canyon	Golf Club Dr.	Palm Springs
29	E. Palm Canyon	Eagle Canyon Way	Cathedral City
30	E. Palm Canyon	Canyon Plaza/El Dorado	Cathedral City
31	E. Palm Canyon	Perez Rd	Cathedral City
32	E. Palm Canyon	Auto Park Dr	Cathedral City
33	E. Palm Canyon	Cathedral Canyon Dr	Cathedral City
34	E. Palm Canyon	W. Buddy Rogers Ave	Cathedral City

35	E. Palm Canyon	Van Fleet Ave/Monty Hall Dr	Cathedral City
36	E. Palm Canyon	Allen Ave	Cathedral City
37	E. Palm Canyon	Date Palm Drive	Cathedral City
38	E. Palm Canyon	Sungate/Boulevard of Cars	Cathedral City
39	E. Palm Canyon	East Buddy Rogers Ave	Cathedral City
40	Highway 111	Innkeeper Ln	Rancho Mirage
41	Highway 111	Frank Sinatra Dr	Rancho Mirage
42	Highway 111	Atrium	Rancho Mirage
43	Highway 111	Mirage Cove Dr	Rancho Mirage
44	Highway 111	Via Florencio	Rancho Mirage
45	Highway 111	Peterson Rd	Rancho Mirage
46	Highway 111	Country Club Dr	Rancho Mirage
47	Highway 111	Fairway Dr/Thunderbird Rd	Rancho Mirage
48	Highway 111	Evening Star	Rancho Mirage
49	Highway 111	Paxton Rd	Rancho Mirage
50	Highway 111/ Future Intersection	Library Way	Rancho Mirage
51	Highway 111	Frontage Road	Rancho Mirage
52	Highway 111	Indian Trail Rd	Rancho Mirage
53	Highway 111	Rancho Las Palmas Dr	Rancho Mirage
54	Highway 111	Bob Hope Dr	Rancho Mirage
55	Highway 111	Magnesia Falls Dr	Rancho Mirage
56	Highway 111	Painters Path/Park View	Palm Desert
57	Highway 111	Fred Waring Dr	Palm Desert
58	Highway 111	Desert Crossing	Palm Desert
59	Highway 111	El Paseo/Town Center Way	Palm Desert
60	Highway 111	Plaza Way	Palm Desert
61	Highway 111	Hwy 74/Monterey	Palm Desert
62	Highway 111	San Pablo Ave	Palm Desert
63	Highway 111	San Luis Rey	Palm Desert
64	Highway 111	Portola Ave	Palm Desert
65	Highway 111	El Paseo/Cabrillo	Palm Desert
66	Highway 111	Deep Canyon	Palm Desert
67	Highway 111	Hospitality Row	Palm Desert
68	Highway 111	Village Center Dr	Indian Wells
69	Highway 111	Cook St	Indian Wells
70	Highway 111	Rancho Palmeras/Desert Horizon	Indian Wells
71	Highway 111	Eldorado Dr	Indian Wells
72	Highway 111	Indian Wells Ln	Indian Wells
73	Highway 111	Club Dr	Indian Wells
74	Highway 111	Miles Ave/Manitou Dr	Indian Wells
75	Highway 111	Mountain Cove Dr	Indian Wells
76	Highway 111	Plaza La Quinta	La Quinta
77	Highway 111	Washington St	La Quinta
78	Highway 111	Simon Dr	La Quinta
79	Highway 111	La Quinta Center	La Quinta
80	Highway 111	Adams St	La Quinta
81	Highway 111	La Quinta Dr	La Quinta
82	Highway 111	Dune Palms Rd	La Quinta
83	Highway 111	Depot Drive	La Quinta
84	Highway 111	Jefferson St	Indio

85	Highway 111	Madison	Indio
86	Highway 111	Clinton	Indio
87	Highway 111	Las Palmas	Indio
88	Highway 111	Monroe	Indio
89	Highway 111	Fashion Mall	Indio
90	Highway 111	Rubidoux	Indio
91	Highway 111	Arabia	Indio
92	Highway 111	Oasis	Indio
93	Highway 111	Jackson	Indio
94	Highway 111	Lorraine St./Golf Center	Indio

06-A Section 1978 Streets and Highway Code (AB2002)

AB 2002 Assembly Bill - ENROLLED

Page 1 of 1

BILL NUMBER: AB 2002 ENROLLED
BILL TEXT

PASSED THE SENATE AUGUST 16, 2006
PASSED THE ASSEMBLY MAY 4, 2006
AMENDED IN ASSEMBLY MAY 1, 2006
AMENDED IN ASSEMBLY APRIL 6, 2006
AMENDED IN ASSEMBLY MARCH 27, 2006

INTRODUCED BY Assembly Member La Malfa

FEBRUARY 9, 2006

An act to add Section 1978 to the Streets and Highways Code,
relating to highway signs.

LEGISLATIVE COUNSEL'S DIGEST

AB 2002, La Malfa Highway signs: veterans.

Existing law authorizes local authorities, with respect to highways under their respective jurisdictions, to place and maintain, or cause to be placed and maintained, signs to recognize the sponsors of the Adopt-A-Riverway Program.

This bill would authorize county officials, with respect to any state or county highway within their respective jurisdictions and upon a resolution adopted by the respective county board of supervisors, to place and maintain, or cause to be placed and maintained, at or near the county line and at county expense, signs stating, or to add to their existing signs, the statement "Where We Honor Veterans." The bill would require the approval of the Department of Transportation if those signs are on a state highway.

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1. Section 1978 is added to the Streets and Highways Code, to read:

1978. (a) County officials, with respect to any state or county highway within their respective jurisdictions and upon a resolution adopted by the respective county board of supervisors, may place and maintain, or cause to be placed and maintained, at or near the county line and at county expense, signs stating or adding to their existing signs the following statement: "Where We Honor Veterans."

(b) Signs or additions to signs described in subdivision (a) that are on a state highway shall only be placed or added to upon the approval of the Department of Transportation.